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General Final Examinations and Tutors'

AFTER ALL that has been said in late years about the various developments in college education which employ the general examinations shortly before graduation on the major subject, or field of concentration, it is neither necessary nor desirable to do more than to touch on a few points. What deficiencies in our higher education the systems described are well known. Well known, also, are the main outlines of the two chief systems.

The first is that of the general examinations in a field for all students who specialize in it. This system, fully developed, requires a large body of tutors to supervise the students' work and help them to prepare for the general final examinations. *The facts* hold up to the present. These men are appointed partly, or almost partly, for their preparation, though, as we shall see, they will not necessarily remain a special body. This scheme is extremely the most expensive and elaborate. It has existed longest and in the most elaborate form at Harvard.

The second plan is applied only to a strictly selected body of students chosen for their special ability and need; this is the so-called Honors Course, or Independent Study Plan, ending with a general examination. Usually, I believe, these students are released to a large extent from ordinary course requirements, and in most institutions are guided individually by the regular professors; little addition to the regular staff is therefore required. It is the system adopted, or pursued, at Seattle, Northwestern, Columbia, Stanford, and many other institutions. The most important descrip-

* Address before The Association of American Universities, Northwestern University, November 11-13, 1915, prepared by permission from the Proceedings of the Association.

tion of it is still that by President Aydelotte of Swarthmore, *Honors Courses in American Colleges and Universities*, in the *Bulletin of the National Research Council*, volume VII, part 4, number 40 (January, 1924). In this plan there is the greatest possible variation in the several institutions. I have only one thing to say about it. It has the great advantage of being more easily introduced than the other, being only moderately expensive. From some observation in the east, I believe, however, that it is more difficult to maintain and continue efficiently than the other, provided the other is adequately supported financially. Especially in smaller, conservative, old-fashioned institutions, it is difficult really to arouse the professors to the possibilities of this educational method and to make the students realize the immense opportunities it offers. It may not be difficult to induce a college faculty to adopt it, now that it has become recognized as an important new educational development. Hand-wagon psychology exists in colleges, though they are freer from it than the outside world. If adopted in a half-hearted way, the plan is in danger of becoming neglected and watered down. Students may be discouraged from entering upon it, professors will regard it as a reflection on their courses, and it will fill more space in the college catalog than it fills in anybody's thoughts. What is necessary to make the system vital and permanent is persistent faith, magnetic enthusiasm, vigilance, and hard work through years on the part of more persons than one, preferably on the part of one in each department. There is no use in being stampeded, or forced, or excited into it; unless some leader or leaders have the vision, have caught the infection, and will make it one of their main interests, the thing is liable to fall flat.

Much the same, of course, is true of the other system—that of the general examination and tutors for all students, or all students in certain departments. Like matrimony, it is not to be entered into hastily or unadvisedly, but soberly, discreetly, and in the fear of the Lord. It is so expensive, however, that there is little danger of hasty action. If

ways and means are provided, there is less danger here of the thing becoming a dead letter, simply because here there is a body of men whose main interest is to prevent it from becoming such. What some of the methods and problems in this system are, what some of the difficulties are (aside from the financial), and the exceeding great reward under favorable conditions, is what I propose to speak of, using Harvard principally as the illustration.

The plan of a general examination before graduation (properly speaking, a revival from earlier generations) was first adopted in the Harvard Medical School in 1911. Under the Faculty of Arts and Sciences, the Division of History, Government and Economics first put it into effect with the class which entered in 1913. In 1919 it was extended to other divisions (that is, groups of departments). It has been used chiefly in the humanities, on the theory that in mathematics and the natural sciences more advanced courses more or less necessarily presuppose the knowledge gained in the elementary, so that when a man ends his college studies all that he has learned is more or less in running order; further, on the theory that in the laboratory he receives some of the same sort of supervision which other students gain from their tutors. These suppositions, however, are only half true; and it is interesting to note that the department of mathematics has just introduced tutoring and the final examination, every professor, in fact, taking some students as his particular charge, with no tutors specially appointed. It is hard to doubt that such action would be salutary even in departments of natural science. But it will probably remain true that the system is most needed, and exerts a deeper influence, in departments of literature, history, government, economics, and philosophy.

The center of gravity in the system is still the general final examinations in the field of concentration, and has been from the first. The plan started as an attempt to require of the student a grasp of his whole subject and to ascertain if he has grasped it, and one of the functions of the tutor is to aid him to do so. The examinations extend over several days

in May of the senior year, covering not only the whole ground of a student's field of concentration but, more intensively, certain parts of it selected by him. This is a rough description of conditions which vary according to the department, or group of departments.

Various problems in this connection are being considered which are too minute to go into here. From the point of view of the university the mere examining is a large undertaking. The mere drawing up of the examination questions is an arduous task. To avoid a commonplace, conventional, shop-worn set of questions, to be fair to men who have been differently prepared, to call for thought and discrimination as well as memory, to observe proportion, to permit a proper and prevent an improper variety of choices, to ascertain if the whole field of knowledge has been covered, and yet to test grasp and understanding of detail, is no slight matter.

In addition to this is the reading and grading of the hundreds of long papers, several from each candidate. It is customary for two examiners to read each paper, and, in case of their disagreement, a third. In one group of departments two professors are relieved from a considerable part of their teaching in order to perform these functions. In others a larger committee is in charge of the matter, who are not relieved of teaching but are aided in a different way. Supplementary oral examinations are not usual, except in the case of candidates for distinction or honors, and sometimes for students who are on the edge of failure, to ascertain on which side they should fall off.

In the Division of History, Government, and Economics, all students, when the system was adopted, were examined orally, which proved, as might be expected, perfunctory. In this division the student is examined on the whole field of these three subjects. He has a second examination on one of the three to which he has devoted most attention, and a third on a part of that field, in which he has specialized still further. In the Divisions of Ancient and Modern Languages all students are examined in the Bible and Shakespeare (familiar pair!); further, those concentrating in

ancient languages are examined on two of the great modern authors, such as Dante, Cervantes, Chaucer, Milton, Molière, Goethe; and those concentrating in modern languages, on two ancient authors such as Homer, Plato, Aristotle, Cicero, Virgil (not necessarily studied in the original tongues); and, of course, further, each student on the literature to which he has devoted most attention. Students concentrating in philosophy are examined in the history of philosophy, ancient and modern, and in general psychology; and also in systematic philosophy; that is, in at least two of the three fields, metaphysics, ethics, logic. In addition, the student receives an oral examination on a special topic, such as contemporary philosophy, aesthetics, Greek philosophy, philosophy of religion, etc. These examples will suffice to show how both wider and more specialized knowledge are tested in the examinations, and also how the several departments pursue their own methods.

While the tutor entered the system as an adjunct or corollary to the examination, he is far more than this, as of course it was foreseen that he would be. In fact, throughout a large part of the student's college years the tutoring appears to be the main element rather than the final examination. He meets his tutor fortnightly, or weekly, who talks with him about his courses, assigns him reading and discusses it with him, assigns him written work and criticizes it, and generally keeps track of his intellectual progress. Instructed by lecture or recitation, the student is apt to feel that he has been told all that he needs to believe, or worse yet, to know, and to feel that he need know nothing else; we have not been so far as we might be from the methods of Jesuit colleges. I speak from memory of my own college days. The close relation with the tutor, and the operation side by side of the two sets of teachers, promote independence and a spirit of inquiry. If the tutor is the right kind of man, he also occupies somewhat the rôle of an older brother, when such a rôle is in place, helps the student solve the problems of college life and even, sometimes, of love affairs. The aim is to make the relation of tutor and tutored informal, human.

and genial. While the former normally has an office in which he may meet his students if he pleases, many tutors receive them at their rooms, or houses, and offer them such stimulus to geniality as tea and cigarettes (or so I hear). Beginning two years ago, several of the younger unmarried men are given free quarters in the senior dormitories, with the understanding that they should informally entertain at least once a week not only their own special students, but other seniors.

The attempt to establish a human relation has succeeded so well that some directors of tutors even think the men spend more time with their students than they need to spend. The tutor who enjoys taking his case in his inn naturally finds the students ready to spend much time in general chat. It is not so easy when trying to cultivate a close relation to cut interviews short. For instruction, the students are met singly or in small groups of those whose reading is much the same. The number is kept small enough to be of the nature of a private consultation, and not of a clinic, a method quite different from that of the ordinary classroom. The ideal number of students for each tutor is hard to determine. There are still felt to be too many students per tutor in the department of English, although the number has been reduced from about 55 last year to about 40 this year. In history, government, and economics the number is 30 per tutor, which also is felt to be too many. The same complaint of too many students per tutor is also heard in Oxford and Cambridge, but complete satisfaction on all hands with any system is hardly to be expected this side of the New Jerusalem.

It has been interesting to ascertain on what sort of student the tutors spend most time. In general, these are students who are both brilliant and ambitious, those with whom the results of stimulation are most apparent. At the same time, I have heard of no tutor who is not more than ready to labor long with the man who has serious difficulties, whether because of bad preparation or because he is dull, if earnest. Students who are simply not interested naturally receive

the least attention, but it should be added that there are very few cases of prolonged and definite negligence on the part of students, especially seniors. In general those receive most attention who appreciate it most. As to the apportionment of time among the various college classes, in one group of departments the amount of time increases from sophomore to junior to senior. In another, the sophomores receive a good deal of attention in order to launch them and give them momentum. During the junior year they are left more to themselves, and as seniors efforts redouble.

The scheme for the system, as regards teaching and examinations alike, should not be a rigid and formalized one. The ideal is a scheme of limited elasticity, which will stretch a good deal in any direction yet maintain a uniform bulk and weight, which keeps its aim and general method clearly in mind yet allows experiments as to particular methods, and adaptation to different, or altering, conditions according to the subject-matter being taught, to the teacher and to the individual student. Many such experiments and ways of meeting problems are constantly being tried, and no year passes without noteworthy alterations. Beginning in 1924-25, for example, in view of the great amount of work involved by the system, seniors might be released from one of the four courses which they were previously required to take, and beginning with the year 1926-27 candidates for distinction who may be regarded as worthy of the privilege are released from another, thus reducing their courses to two for the senior year, or three each for the junior and senior years. This is only on the understanding that they are doing additional work with their tutors. This is very far from meaning less work for the degree than in pre-tutoring days. It was estimated a few years ago that the new system has added the equivalent of a solid year's work. Further, the experiment is about to be tried in one department, at least, of extending the tutoring system to freshmen. Without cavil, no class is more in need of sympathetic guidance than freshmen. The transition from the still considerable oversight usual in preparatory schools to the freedom of college

notoriously leaves many freshmen at a loss as to their work, in spite of various other attempts at guidance and nursing.

The difficulty of extending the tutorship to freshmen is due to the facts that the tutor is normally engaged with the student's major subject or field of concentration, and that freshmen have not as yet chosen it. It is possible, however, for any department to select in a large elementary course a small number of particularly promising students, and assign them to a tutor who will give them additional work and particular attention. Students thus especially promising and successful in a field of work are likely to be those who will continue in it. At all events the experiment will be interesting. Among other problems, that of the relation between courses, tutoring, and the general examination is full of details to be worked on. One suggestion has been that for seniors courses should cease in April, leaving them free to devote all their time to preparation for the general examinations. Again, there is an inevitable tendency for students to elect courses which they think will aid them in these examinations. This is proper enough, since such courses are fundamental; but is somewhat regrettable if it means great disregard of rather highly specialized courses by specially expert authorities. This danger is avoided to some extent by putting among the large number of questions on the examinations from which choice may be made questions bearing on these courses, so that a man who has taken such courses has a chance to exhibit what he has learned in them. No one, so far as I know, seriously expects that the usual American method of instruction by lecture and recitation will be entirely abrogated, or indeed infringed on very much farther. We cannot dispense with the expert. Some enthusiasts believe there will be some tendency toward further reduction of courses, and that candidates for distinction will take more of those of definitely graduate calibre, in which the methods of instruction are more like those maintained by the tutors. What effect such a swelling of graduate courses (often too large already) by less mature, even if able, students would have on our graduate education

perhaps these men have not considered. Another progressive tendency will probably be a further obliteration of the line between tutor and professor. As there come to be more and more tutors of maturity and longer experience in this work, more and more of them will give regular courses, and perhaps more and more of the men called to professorships will take a certain amount of tutoring; but there must always be men who, highly successful in one of these functions, would be less so in the other, and therefore will confine themselves to one of them.

One of the problems which has to be constantly worked on is the personnel problem. Good tutors must be both born and made, but they cannot be ordered over night. The tutor must have broad, accurate, and ready scholarship in his field, for he must be equipped to lead agile minds. Personally, he must have preception, adaptability, patience, judgment, enthusiasm, and sympathy with young men. The rather intimate relation with the students requires him to be such that students of all kinds of origin will accept the relation gladly. Success has been met in fulfilling these requirements, but it has been none too easy, even with the large reservoir of the Harvard Graduate School at hand. Where a graduate school of repute is connected with the college involved, many men suitable for tutors are drawn to it by the possibility of engaging in this new and interesting academic occupation while pursuing their studies.

But a considerable increase in the number of suitable men is still needed. When the tutoring system is first introduced in the department, the increase in the department staff is large. In that of which I am a member there are eighteen or twenty tutors who were not in it in 1924, before tutoring was introduced. The difficulty is merely a sudden and special case of perennial difficulty. Notoriously the academic profession is not drawing as superior men as it should, and nothing much is being done in this country to make the profession more attractive. We are neither making it more attractive for the ordinary good man, nor setting up a few great prizes in the way of position to stimulate the

exceptional and ambitious. A few years ago in the Church of England the injustice was pointed out of paying an elderly curate £200 a year and the Archbishop of Canterbury £15,000. The retort was made that better men are drawn to a profession through the possibility of a great prize (to speak in a worldly manner) than merely by the certainty of mild comfort; by allowing every curate, if he wishes, to carry an archiepiscopal crozier in his valise. We have nothing analogous to dangle before the eye of the ambitious scholar, excepting, of course, the greater executive positions (if they are to be so regarded). However, in sum, the personnel difficulty is being successfully met, and will become progressively less and less difficult.

A problem which one of the largest and most important groups of departments is much concerned with at present, and which all should be concerned with, is the effect of the burden borne by the tutor upon his own intellectual advancement and fertility. The tutors take their duties seriously and find themselves handicapped for their own study. This is particularly regrettable because some of them are still candidates for the doctor's degree, though it is hoped that in future they will mostly have passed this milestone. The tutors themselves think that the burden can best be reduced by reducing the number of students for each man. Some of the older men think the remedy should be to relieve them from tutoring duties for a longer time, for example from Christmas to the mid-year examinations in February.

This problem is merely one case of a larger problem, which indeed one would be false to his convictions if he failed to comment on, the effect of this new system as of other recent developments in university life on the literary fertility of university teachers. No agency has done more to emphasize the importance of research in universities than this body which is meeting here. Research seems to be particularly impeded for men in the humanities, who, for one reason or another, seem to be in particular demand for administrative positions. Yet none of them would admit that humanistic research is less important than strictly scientific. There is

no need of defense for a force which has freed the human spirit from so many bugbears as the advance of humanistic knowledge has done, from Plato to Valla and from Valla to our day; a force which is so sorely needed now to restore a beneficent equivalent of these bugbears. There is some compensation in endowments for research, which enable a teacher to take a year off now and then, but every man cannot get up his momentum after long quiescence. All human machines cannot rise from 1 to 50 miles an hour in ten seconds, as some products of Detroit are said to do. Humanistic research in this land of business almost all comes from university teachers; but, with the national atmosphere, endless distractions, and the desire to produce at least something, often tends to be a Woolworth scholarship, not to say Piggly-Wiggly. Not many men set their face against the policy of small profits and quick returns, and produce extensive works. Such contributions from university men are, in proportion, rarer than formerly.

As to the present application of these facts, the system of general examinations and tutoring requires older men of experience and high standing to administer, a work so arduous that it sometimes requires half a summer to recover from it. The tutors, at present at least, though not ideally, younger men, are not always in complete command of the whole field for which they are responsible. To keep their command of the whole subject furbished and bright, that they may meet many clever students studying different things, and even show the bearing of the subject on other departments of learning, requires much time. This doubtless makes for broad and human cultivation and scholarship and will make men's research better when they do it. But will they ever get to it? One remedy seems to be some further progressive reduction of the number of students for which each man is responsible, and perhaps the progressive deletion of the line between tutors and teachers of courses, of which I have spoken already. Another is the further multiplication of endowments for research, to enable more men to take a few months off, or a year, and to do it more

frequently. Another remedy, though not applicable to the tutors, which has been little tried in this country, but which might well be tried on a considerable scale, is the creation of research professorships, somewhat on the lines of professorships on the continent of Europe; for men who have shown distinguished ability and zeal in scholarly fertility, and who would be relieved from most executive work and all but a minimum of teaching. Through them our universities would advance knowledge more rapidly, and the distinguished and enviable position of such men would do something to combat the idea, *de facto* common among younger faculty men in too many institutions, though by no means in all, that preferment lies by way of administration.

In conclusion, the system has been richly justified by its fruits. The profit, and even satisfaction, derived by the students from it is one of the most invigorating things which one sees on returning to Harvard after an absence of twenty-two years. They value the assistance of the tutors more and more as they advance from the sophomore to the senior year. This is partly, of course, as a source of counsel and ghostly strength as the general examinations approach. To the sophomore, these examinations seem merely one far-off, diabolical event; to the senior, they seem imminent and awful. All students take their work with their tutors more and more seriously, but it would be a great mistake, as has been intimated, to suppose that the only, or chief, function of the tutor is merely to prepare for these examinations. He rouses students, if they are rousable, to a very large amount of purely disinterested reading. In the junior year, for example, an English tutor will put men through a course in nineteenth century prose with no special bearing on the examinations. One energetic tutor last year reported that in the first two months and a half of the year a sophomore read, outside his regular class work, and discussed with his tutor, thirteen plays, two long poems, and one long novel, most of these being comparatively recent (not ephemeral) and not bearing particularly on the general examinations, work which must have required an hour or two of reading

daily. So great is the stimulus that good seniors develop a grasp and poise and intellectual initiative which advanced graduate students ought to have but often have not. I might mention one observation of my own in this connection. I was asked to attend and take part in the discussion at an evening meeting of tutors and students at a tutor's house, there being about twenty present. The intelligent report by a young student was followed by an equally intelligent discussion participated in by six or eight men (in a rather dark room). I said to the host afterwards that the discussion seemed to me excellent, but I regretted that so few except tutors took part in it. He said with surprise that everyone who spoke, except one, was a student.

May a few more visual observations be permitted me? The change in the spirit and attitude of Harvard undergraduates is astonishing. In former years, when the first warm days of spring arrived, there was an engaging air of relaxation in the College Yard—men on window-seats with open windows, the sound of the mandolin and banjo, groups at ease on the grass or steps. Now there is silence and industry. Of course the main cause is the near approach of the general examinations, by which the seniors know they shall stand or fall. But it is not all dread, partly a genuine quickening of intellectual interest that reacts backward over the lower classes. The Glee Club still sings now and then on the steps of the Library, but after they are done men go about their business. No doubt there is a certain loss of some of the charm of undergraduate life, and indeed undergraduates in other institutions who are told of the change show a crestfallen expression. But what serious person can deny that the change is beneficial? It has not gone too far; no way has yet been devised of making the average undergraduate kill himself with study. It has even been found that the competition for prizes, of which a considerable number of attractive ones are offered for literary competition and the like, has needed to be put at a different time of the year, in order not to conflict with the intensive study being devoted to preparation for these examinations. It is some-

what amusing to the *revenant* to see one or two—I hesitate to say dinosaurs—survivors from an earlier epoch strolling around and merely emphasizing the change which has come over the spirit of the undergraduate. Partly owing, no doubt, to other causes, one notices a great diminution in pose, affectation, triviality, merely superficial cleverness, airiness, a change which is visible in college journalism. The students met in the College Yard today look as if they were going somewhere.

J. S. P. TATLOCK.

American National Committee on International Intellectual Cooperation

THE AMERICAN National Committee on International Intellectual Cooperation was established after an expression had been made by the Council of the League of Nations approving the idea of setting up in each country a national—not necessarily governmental—organization to act in liaison capacity between the country and the League's Committee on Intellectual Cooperation. The National Committees are also to act in similar capacity in relation to the International Institute of Intellectual Cooperation which has been established, with headquarters in Paris, as a working agency of the League's Committee.

Thirty-two countries have now established such National Committees. Their general function has been described in a single sentence as follows:

The function of the National Committee is to act for the International Committee in matters falling more particularly within the national sphere, to collect information, to suggest international problems for study, and to secure the adherence of particular countries to a general international program.

The American National Committee was set up on the initiative of Doctor Robert A. Millikan, the American member of the League's Committee on International Intellectual Cooperation, after consultation with Doctor Nitobe, under secretary-general of the League and director of its section of international bureaus. The present members of the Committee are: R. A. Millikan, chairman; Vernon Kellogg, secretary; James H. Breasted, Raymond B. Fosdick, Virginia C. Gildersleeve, George E. Hale, Charles H. Haskins, C. R. Mann, Herbert Putnam, Elihu Root, and Lorado Taft.

A first or organizing meeting of the Committee was held in New York on January 5, 1926, with most of the members present. At that meeting some consideration was given to the matter of financial support for the Committee, and as a

result certain funds have been given to the Committee by the Carnegie Corporation, the Carnegie Endowment for International Peace, and Mr. John D. Rockefeller, Jr. With this money available it has been possible to engage the services of a competent executive secretary on part time, together with a stenographer, and to meet certain modest office and travel expenses. An office room has been provided in Washington without charge. The executive secretary is Mr. J. David Thompson (address, 2101 B Street N. W., Washington, D. C.).

Last summer the Secretary of the Committee attended the meetings of the International Committee, and of its various sub-committees, in Geneva. He also had several conferences with the director and other officers of the International Institute, and a mutual understanding was arrived at concerning practical cooperative service which could be rendered by the American Committee to the Institute. This involves a certain activity on the part of the Committee in the collection, analysis and sending to Paris of informational data derived from universities, research institutes, museums, libraries, and other scholarly organizations. There is no doubt that the American Committee, being especially conversant with American intellectual activities and conditions, and aware of the existing available information and how best to acquire new information, can be of much use to the Institute in connection with its surveys and investigations. It is also in position to undertake, on its own account, certain activities in this country which it may deem useful to the development of international intellectual cooperation, and to suggest undertakings which may, from an American point of view, seem desirable to be set under way by the International Committee and Institute.

A second meeting of the American National Committee was held in New York on December 27. Professor Gilbert Murray of Oxford University, Vice-Chairman of the International Committee on Intellectual Cooperation, and Professor Alfred Zimmern, Assistant Director of the International Institute of Intellectual Cooperation at Paris, who

are visiting the United States, attended by invitation to confer with the Committee regarding the assistance it might render to the International Committee and Institute.

The Secretary made a short report on developments since the last meeting of the Committee, substantially as above described, and submitted a financial statement.

Professor Gilbert Murray sketched briefly the purpose of intellectual cooperation between nations and the activities of the International Committee since its establishment by the League of Nations in 1921. He called attention especially to its recent decisions relating to promotion of the study of international relations and the work in this field carried on during the summer months by the Geneva School of International Studies. At the present time funds for carrying on this institution are collected each year by its director, Professor Zimmern, personally; and this consumes a large part of his time and energy as Assistant Director of the Institute. Professor Murray suggested that the American National Committee could render a very useful service by relieving Professor Zimmern of this personal solicitation and itself undertaking to secure for the International Committee the funds needed to support the Geneva School. The discussion which followed indicated that the Committee would give serious attention to the matter.

Professor Zimmern gave an account of the activities of the various sections of the Institute since its inauguration in the latter part of 1925 and the difficulties encountered because of depreciation of the French franc and the resulting rise in the cost of living in Paris. The staff, which was reduced considerably last July, is international, consisting of persons specially qualified for the various branches of the Institute's work drawn from different nationalities. Some of the results of investigations made by the Sections for University Relations and for Scientific Relations are published in their respective bulletins issued bi-monthly: the Bulletin for University Relations dealing with higher education and university life in different countries, international educational relations, lecture courses, and students' associations,

national institutes abroad, etc.; and the Bulletin for Scientific Relations concerned with agencies for bibliography and documentation, coordination of library resources, organization of research in all fields of knowledge, international congresses, etc. It has been necessary recently to consolidate these two sections, and a new chief is to be appointed shortly. The Artistic Relations Section is actively engaged on two major projects—the organization of a Congress of Popular Arts which is to be held in Bucharest late in 1927 or early in 1928, and an International Museums' Office to serve as a clearing house of information about art museums and their collections and to promote exchanges of reproductions, such as photographs, casts, etc. The Legal Service of the Institute is making further studies on the question of scientific property which has been discussed at many meetings of the International Committee, and is preparing a draft of a new international convention dealing with copyright. Current news of the various activities of the Institute and the International and National Committees is published in the Bulletin of the Information and Documentation Section.

Professor Zimmern made special mention of the Institute's need of a well-equipped and properly managed special library covering all phases of international intellectual co-operation. He informed the Committee that he had received a communication from M. Luchaire, Director of the Institute, suggesting that possibly the American Library Association might be willing to undertake the equipment and direction of such a library and raise the necessary funds for it, which would amount to about \$8,000 a year. He referred the matter to the American National Committee for consideration.

Dr. Putnam expressed his opinion that a small, well-selected library for the Institute at Paris was indispensable. In the hands of the person proposed—and taking full account of the informational equipment of the American Library of Paris—such a collection might render service of high value, depending, however, more upon its administra-

tion than upon its exact content. The main essential would, therefore, be the quality, ability, and experience of the person in charge. He thought the librarian should be responsible to the Director of the Institute rather than to the American Library Association.

After some further discussion, on the motion of Mr. Elihu Root, it was resolved "that the Committee earnestly support the proposal for establishment of a working library for the Institute and employment of a competent librarian to administer it and the raising of funds for this purpose"; and it was further resolved "that the Committee suggests the name of Miss Florence Wilson, of the League of Nations Library, as possibly available for the position of librarian."

In the course of the discussion on this matter, attention was called to the proposal made to the American Library Association by the Brussels Institute of Bibliography that the Association should take over the direction and financial support of its *Répertoire Bibliographique Universel* for five years. The question was raised whether this could advantageously be joined with the Institute library project, as the League of Nations, on the advice of its Committee on Intellectual Cooperation, had entered into an agreement with the Brussels Institute involving mutual assistance.

Dr. Putnam advised that the case for the repertorium was not so clear and it should be considered separately. If developed into a Union Catalogue of the libraries, principally European, of concern to an investigator, it might have a utility similar to that of the Union Catalogue of American research libraries being developed at the Library of Congress. The utility of such a piece of apparatus, however, depended upon its association with some establishment at a center of research to which questions are naturally addressed. He said that the Library of Congress was such an establishment but questioned whether the condition was fulfilled at Brussels. It might become true of the Institute at Paris in cooperation with other informational centers there. If there were a prospect that the repertorium might be transferred to Paris and associated there with these

agencies, it might render a service of high importance, provided it were reorganized, perfected and adequately maintained. If asked for a recommendation, it would be not for an immediate grant for the work itself but a small provision for a preliminary survey and report by Miss Wilson with the cooperation of two impartial experts in bibliography.

The Committee decided it was not called on at present to take any action on this matter.

A request received from the International Institute at Paris that a committee be set up in the United States to participate in the organization of the Congress of Popular Arts was presented to the Committee for consideration. Mr. Taft, to whom the documents relating to this Congress had been referred, was of the opinion that there were no "popular arts" in the United States in the sense of peasant handicrafts to which this Congress was primarily to be devoted, Indian work being apparently excluded as aboriginal. It was, therefore, decided that a special American committee was unnecessary and that the executive secretary should collect any information desired from this country.

The Institute had also requested the Committee to nominate six museum experts to represent the United States on the Advisory Council being organized to assist in the direction of the International Museums' Office to be established in Paris as noted above. The American Association of Museums had been consulted in advance of the meeting, and the Committee approved the list of names submitted by its President.

Another letter addressed by the Institute to the Committee drew attention to the facilities which the Bulletins of the Sections for Scientific and University Relations offer for the publication of original articles dealing with higher education and university life or with the organization of science, either emanating from the National Committees or written by other leading men in their respective countries. The Chairman, Dr. Millikan, reported that some American material of this character had already been contributed to the old series, the Bulletin of the International University

Information Office at Geneva, which was the predecessor of the corresponding Section of the Institute, and proposed that the officers of the Committee be instructed to arrange for the preparation of further articles showing conditions of intellectual work in the United States. The Committee adopted the suggestion.

The Executive Secretary reported briefly on several matters taken up in the office as follows:

The list of notable books published in 1925 in the United States needed for inclusion in the annual international list of 600, first issued by the Institute for the year 1924, was compiled for the Committee by the editorial staff of the American Library Association as in the previous year and has been transmitted to Paris.

The project for the standardization of anatomical terminology received from the Scientific Relations Section was sent to the President of the American Association of Anatomists for consideration and action by this Association at its next meeting, and the text was published in *Science* and in the *Journal of the American Medical Association* to bring the matter to the attention of zoologists, comparative anatomists, and the medical profession generally.

The request of the Institute to be supplied with American reference books for the general guidance of its staff had been met by furnishing such material as could be obtained gratis, together with a list of other manuals and periodicals containing current information of importance to the Institute which might be accessible in Paris. The Committee made a small appropriation for purchasing such American year-books and periodicals as the Institute ought to have in its own office collection which could not be obtained free or by exchange.

The Artistic Relations Section is organizing traveling exhibits of engravings from the European chalcographies and had inquired whether the American National Committee could provide for such an exhibit to make a tour of the United States. The matter was taken up with the American Federation of Arts, which, as one of its regular activities,

arranges tours for art exhibitions assembled by it. The Federation cordially welcomed the opportunity to make traveling arrangements for this international exhibit also, and the Institute has accordingly been requested to deal directly with this organization.

The same section of the Institute is engaged in preparing an index of collections of photographs of works of art existing throughout the world. It reported that replies had been received from less than half of the questionnaires sent to institutions and individuals in the United States and requested the American National Committee to assist in collecting the remaining information. Through the executive secretary of the American Association of Museums it was ascertained that an index of a similar character was being prepared by a member of the staff of the Metropolitan Museum of Art, New York, and the matter is being investigated to determine the possibilities of collaboration.

The preliminary typewritten report on American agencies for international intellectual cooperation, more particularly in the domain of inter-university relations and bibliography, prepared by Mr. Thompson in July and circulated at the last meeting of the International Committee for the information of its members, was submitted for examination. Mr. Fosdick thought it should be developed and published. Professor Breasted suggested that the addition of a section on international cooperation in scientific research, e.g., in the field of archaeological exploration, would be useful; and Mr. Taft made a similar recommendation with regard to art. The report was accordingly ordered to be extended in these directions and issued as a publication of the American National Committee.

Dr. C. R. Mann called attention to the success which had attended efforts to organize cooperative investigations by American universities and colleges by selecting certain problems on which they were working individually and proposed a plan for international cooperative studies of common national problems on which he submitted the following memorandum:

INTERNATIONAL COOPERATIVE STUDIES OF COMMON NATIONAL PROBLEMS

The technique of cooperative education as worked out by team play among individual institutions in the United States is applicable to team play among nations. Suppose, for example, that the Institute of Intellectual Cooperation in Paris were to undertake to study the national characteristics of adult education simultaneously in England, in France, in Germany, in Scandinavia, in Belgium, in Czechoslovakia, and in the United States. It might invite well-known educational leaders from four or five nations to a conference to make a general plan. Such a group would constitute a supervisory committee that would define the general scope of the study and select international agencies that should be invited to cooperate. Typical American organizations for this purpose are the International Education Board, the American Association of University Women, the Carnegie Endowment, the American University Union, the Pan American Union, the Guggenheim Memorial, the Laura Spelman Rockefeller Memorial, the C. R. B. Educational Foundation, the Scandinavian Foundation, the Commonwealth Fund, etc.

The Institute of Intellectual Cooperation might then invite each of the cooperating organizations to appoint one fellow or qualified expert to devote himself to this work under supervision of the Institute and its supervisory committee. The group of fellows or experts thus constituted would meet with the supervisory committee in Paris to become oriented on the problem and on the details of the common plan of action. Then each would proceed to a particular country where he would stimulate local agencies to get the desired information for their own good as well as for the supervisory committee of the Institute. Each such local investigator would keep in touch with the Paris general headquarters. Occasional conferences of these investigators would be held at Paris for comparison of results and further perfection of plans.

Such a cooperative study would lead to a report containing a section on each nation so written as to be comparable with those of other nations. Such a series of comparative reports would be highly stimulating to further study and progress on the part of each participating nation. Trains of thought are started under conditions favorable to further local growth. International understanding begins to develop. In addition, the several international organizations that cooperate in the work learn to cooperate by actually cooperating on a common practical project. The overhead cost would be small in comparison to the results secured because most of the detailed work is done by people who do it as part of their regular work for the benefit they themselves derive from the experience.

Dr. Mann asked if the American National Committee

would approve this plan in principle and invite the attention of the Institute to the specific proposal, and in the event of the Institute being desirous of undertaking the supervision of such a study, if the Committee would be ready to help secure cooperation of other American organizations and to help raise the funds required to meet the necessary overhead costs. A member of the Committee suggested that the latter would involve a large and growing responsibility which the Committee should not take. Doubt was expressed as to the willingness of the Foundations named to cooperate on the particular subject of investigation suggested—adult education. He moved that a sub-committee be appointed to investigate and report on the possibilities of cooperation between these agencies. The motion was adopted, and the chairman named Messrs. Kellogg, Mann and Thompson.

A communication from the Secretary of the American Council of Learned Societies proposing to turn over the work formerly conducted by its Committee on the Distribution of Learned Publications abroad for continuation by the American National Committee was next considered. The Executive Secretary reported the results of correspondence with various agencies concerned with the distribution of books to foreign libraries to fill gaps, due to the war, in their files needed for research, and advised the Committee that, as the funds for these activities were being scaled down to bring them to a close in 1928, it should be sufficient to authorize its officers to take appropriate action if any specific opportunity for helpfulness should be brought to their notice. This was approved.

Shortly before adjournment, Dr. Mann suggested that it would be worth while for the Committee to inquire into the general plan of organization of liaison institutions concerned with the interchange of students between different countries and determine what principle should govern—whether each country should be stimulated to establish a single national office to act as host to all foreign students coming to attend its higher educational institutions, or whether, as

at present, each country should maintain university offices abroad to promote the interests of its own citizens studying in foreign countries. For example, the American University Union had offices in Paris and London, and it had been proposed to open additional offices at Rome, Geneva, Berlin and Prague and later develop similar centers in other European countries, the Far East and South America—a very costly program. The Committee agreed that this was a very important matter requiring sufficient time for deliberation and accordingly postponed discussion of it until the next meeting.

VERNON KELLOGG,
Secretary.

Religion in a Liberal Education¹

MY THEME is the place of religion in collegiate education. My point of view is that of the college administrator, rather than that of the religious worker, the clergy, or the church.

The subject is by no means a new one. In one form or another, religion has exerted a profound influence on our colleges ever since Yale was founded to counteract the pernicious religious influence of Harvard.

I must preface my discussion of the present-day situation by a brief summary of events that have led our institutions of higher education into something very like a blind alley so far as their attitude toward religion is concerned.

EARLY COLLEGE RELIGIOUS HISTORY

In colonial times most of our colleges were founded in order either to train candidates for the ministry, or to hold the younger generation true to the faith. But religion fell upon evil days in the quarter of a century following the Revolution. Due to the influence of Rousseau, Voltaire, and others of the French school, and because of the disorganization which followed the war, religion was at a lower ebb in our colleges than it has been at any other time. In many institutions which registered one hundred and fifty or more students there were scarcely a dozen communicants, and faculty joined with the student body in expressions of scepticism and contempt of religious matters.

The great revival of religion which took place in our colleges between the years 1797 and 1804 produced a profound effect upon the religious interest both of students and teachers, with the result that during the thirty years following the beginning of the century, the number of men

¹An address delivered at the University Night Service of the West End Presbyterian Church, New York City.

who went into the ministry from our colleges constituted in several cases from a third to a half of the entire number of graduates.

DENOMINATIONAL COLLEGES

Partly due to this stimulation, and partly due to the opening up of the Middle West, there was a great activity in the founding of denominational colleges beginning about the year 1830. During the two decades from 1830 to 1850 more colleges were organized than had been established in the entire two hundred years previous, and the rate of establishment of new colleges continued to be high, up to the end of the nineteenth century.

Most of these institutions were denominational, and consequently looked upon their function as largely religious. In fact, their origin and existence was due to a desire to strengthen the spirit and usefulness of their own religious sect. As a consequence students, dominated by the religious motive in their plan for higher education, have been naturally attracted to these institutions, and these colleges in turn have become more useful and stronger through this process.

AN OPPOSITE TENDENCY

While the religious motive was dominant in the host of denominational colleges, the state universities and privately endowed institutions, particularly in the East, were moving in the opposite direction so far as religion is concerned. The large universities naturally felt that they were not committed to any one religious sect, and gradually relaxed in their official and curricular attitude toward religion. This feeling was undoubtedly due in part to the fact that they must draw their material resources from all kinds and conditions of donors, as well as from the taxpayers, and in part to a desire to attract a student body from every creed and location.

With the increase in immigration and with the inclusion among the taxpayers of many divergent religious sects and creeds, it was inevitable that our public schools and univer-

sities should become less dominated by the church of our fathers, and more dominated by the state which must of necessity be non-sectarian.

But whatever the cause may be, the fact is that for the last forty or fifty years our larger state institutions and privately endowed colleges and universities, although retaining in some cases, required daily chapel as a substitute for an alarm clock and always protesting in the public utterances of their presidents and professors that they are religious and even Christian, have done very little to include religion in their educational plans or in the offering to their students. If sectarianism was to be eliminated, religion must go with it. For in the mind of the time religion did not rise above or exist independently of sectarianism.

This sharp division along religious lines has existed up to the present time. While the denominational colleges are devoting themselves as best they may to maintaining and promoting their own faith, the state universities and many of the privately endowed colleges are doing almost nothing in religion. For in their opinion, to give any instruction in religion means a commitment to some particular form of religion, or even to some particular denomination or creed, which would make it impossible for them to occupy the high middle ground which they feel to be essential for their integrity.

EXTRA-CURRICULAR RELIGION

The situation that I have described practically leaves the teaching of religion out of all our larger private, as well as public, institutions of higher education. At the same time, sympathetic support has been given to religion as an extra-curricula activity.

From the time of the rapid advance in influence of the Y. M. C. A. in 1870, and partly because of the work of men like Moody, Mills and Clark, students who so desired, organized collegiate clubs or associations for the encouragement of devotional meetings, religious study, and all kinds of religious and semi-religious work. On many college grounds Y. M. C. A. buildings and university churches have been

erected, and the religious interests both of students and faculty have frequently centered in these organizations.

In a sense they are non-sectarian, but not sufficiently non-sectarian to warrant their official backing, either financial or statutory, by institutions that had been forced to crowd religion and theology out of their undergraduate offering. And what is more important, their function has not been educational in the narrow sense. That is, they have not approached religion from the point of view of the scholar who would develop his subject as a field of study, research and objective treatment.

STUDENT ENTERPRISE RESPONSIBLE

These religious organizations have been as remote from the curriculum as athletics, the college daily, or the glee club. Their initiation and maintenance was due to student interest and student support. I repeat, it was an extra-curricula enterprise. Of course the reason for the importance that this movement assumed was due to the fact that religion is one of the few dominant interests of the human spirit, just as the spirit of play is a dominant interest of youth. If these interests cannot assert themselves in one way, they will in another. If the colleges do not think it wise to find a place in their courses of study for these interests, the students are bound to take matters into their own hands and to make a place for them in their own activities.

COURSES IN BIBLE

Furthermore, most colleges give courses on the Bible, and they have served a splendid purpose. But these courses treat the Bible either from the historical or the literary point of view, rather than from the distinctly religious angle. All of us who took these courses in college felt that the course in the Old Testament went along quite safely. But when we took up the New Testament the professor usually seemed to be on thin ice. He could not talk about the real core of the matter without restraint. For religion was not supposed to be a subject for collegiate study.

The reason for this restraint is due to the difficulty in

taking the New Testament as a point of departure for a discussion of religion before a college class consisting of men of all kinds of faith and all varieties of doubt. There are too many divergent convictions both on the part of students and professors to make the path an easy one. Consequently the courses on the Bible are either frankly religious as in the sectarian colleges, or almost entirely literary and historical as in the privately endowed institutions.

With the background that has been described, what is the next move for the colleges in the teaching of religion? I do not now refer to denominational colleges, although the remarks that follow may not be without application to such institutions. I have particularly in mind the privately endowed colleges that have worked away from any feeling of responsibility for including religion in their curriculum.

CAN RELIGION BE TAUGHT?

Last summer I heard a powerful sermon by a well-known clergyman, in which he emphasized the thesis that religion could not be taught, and that there is no use in trying to do so. Religion, he said, could be lived but not taught. As well try to teach affection or loyalty. This position seems to me to miss the point of what real teaching is.

In the old days the professor of history used to read lectures to his more or less attentive students, giving by this means the facts of history and his interpretation of these facts. Today the live teacher of history, or philosophy, or physics, or even mathematics is not a fact monger. He assigns readings for the acquisition of facts. His function is rather to stimulate his students to think about the facts that they have acquired, to place emphasis where he thinks it belongs, and to point out relations that the students would not be likely to have noticed in their reading.

Teaching does not consist in cramming a student's mind with information; it consists in making the student want to read deeply, to think clearly, and to see the bearing of his subject in the world of vital ideas. Real teaching stimulates but does not satisfy. With this definition of teaching I

submit that religion is as legitimate a field for collegiate teaching as any subject in our curriculum.

RELIGION AND THE FINE ARTS

The analogy between instruction in religion and in the fine arts is a close one. The aesthetic and the religious are two aspects of the human spirit that actually exist, and that ought to be discussed, studied and developed.

Thirty years ago we used to hear that the aesthetic side of our nature was not a proper subject for collegiate study. Art could be felt and practiced but not taught, they said. But today an understanding of the nature and the development of the beautiful through the media of painting, sculpture and architecture, music and literature leads our students by the hundreds to an appreciation of the beautiful in their own souls.

Many of them start with an objective study of schools and periods and composition, and end with a glow of appreciative understanding of lovely things that they never lose. This is real teaching. It is nothing else than an aesthetic awakening of the mind to beauties before undreamed which is as real and important as the rational awakening that ought to come through a study of mathematics, or the civic awakening that ought to come through a study of the social sciences.

No instructor can teach reasoning or civic responsibility by precept. He can embody in his own character and manner of living a sense of truth and justice which may be reflected on his students. He can make the conditions as favorable as possible for his students to consider the attitude that they ought to take in these matters. But now-a-day students do not take much on authority. They either work things out for themselves or they do not get them. The teacher of art, of mathematics, of government and of religion can only build the staging. The student must lay the bricks of his spiritual structure by his own effort. In the words of Dr. Buttrick, a college is an organized opportunity for self-education.

So much for the possibility of teaching religion, and its

pertinence in a college course of study. I must say a few words about the angle of approach to the subject of religion for the present day college student.

MAN NO LONGER ALL-IMPORTANT

As the scroll of history is unrolled before the young collegian, he must sense the fact that the whole tendency of scientific discovery, as well as of religious dogma, has led us away from a universe with man as its center.

In early times the earth was the center of the solar system. Now it takes its place with the other planets. Then each tribe, and even each family, had its particular gods. Other gods were false gods. Now we recognize God as revealing himself in various forms to many peoples. Until recently man was set apart from all animate nature as a special creation. Now he is the highest and most specialized result of a long-continued creation. Yesterday the great religious aim of each individual was to save his own soul from a burning hell. Today we are not so sure that there is any burning hell, and most of us are willing to put in our time in being respectable people, and in raising the level of goodness, truth and beauty among those with whom we come in contact, leaving our personal salvation in the hands of a greater power than ours, without prejudice.

Our earth, our religion, our physical body, our soul is no longer the center around which all earth, all life, all religion must necessarily rotate. Each is a member of a system, acting and reacting on the other members, and each moving in a space that is greater and more inclusive than any one. The individual today is not the center of his universe, but a member of a system so baffling in its complexity that it is hard for him to feel any sense of rest or stability.

The old regime rested on the dictum of some accepted authority. Aristotle, Genesis, the church fathers decreed these things, and it was sacrilege to question them. A young man recently told the Chaplain at Columbia that he did not see any use in thinking about religion, because that was all settled by the church long ago. I suppose that there

will always be among us many men who feel the need of an authority outside their own thinking which they can use as a substitute.

We should be very careful in disturbing the faith of such individuals, because the disaster that befalls them is complete when their faith in the substitute for their own thinking is shaken. They usually fall clear to the bottom, losing all faith and all confidence in their own judgment as well as in the doctrines of the church. Unless they can see a scaffolding which starts at the bottom and which will enable them to build a new structure, they are in a sad plight.

YOUTH USES OWN JUDGMENT

Generally speaking, however, our young people do not accept a dictum because it is in any book, however sacred, or pronounced by any person, however holy. They accept it because it conforms to the judgment of the ages, and in particular to their own judgment. Consequently in organizing a study of religion for college students today it is necessary to start back of the usually accepted creeds and doctrines, back of the distinctions that have led to our variety of denominations and sects, with the factual material of history, of society and of human nature, as a solid rock on which the study of religion may be based.

In his Autobiography, Dr. George A. Gordon remarks that he has always wished to write a book entitled "From Authority, Through Anarchy, to Insight." Our young people have certainly emerged from the age of authority, either parental, societal, or divine. Each is master of his own destiny in an anarchy of individualism. It is high time that someone who possesses the vision, clears the way for the next step, which is insight.

So far as our students are concerned, the slate is wiped clean for a consideration of religion. To be sure, they do not seem greatly interested in what would have been called religion fifty years ago. There is, however, no real lack of interest in religion.

The controversy, when it exists, is not between science

and religion, but between science and some doctrine of theology. And many of the younger as well as of the older generation assume that theology, which ought to be the container of rich religious values, is religion itself. But in too many cases the container is quite empty, a fact that has not escaped the observation of our young people.

The normal, well rounded mind is interested in anything that is interesting. But the most striking feature of our young people is not their interest in religion, but their ignorance of it. With the falling away of home training in religious matters, our students have no idea what it is all about. And they are interested to find out.

The man who is ignorant of and is not interested in religion is in the same class as the man who is not interested in science, or art, or the social sciences. We do not frame our curriculum for those exceptional or imperfect minds who have blind spots, but rather for the normal mind that is anxious to obtain a well rounded education. And we cannot correctly assume that lack of interest in religion is the normal state. But real religion precedes creed and dogma, and our younger generation is in this primitive state just at present.

Their great question is found in the title of Doctor Coffin's recent book "What Is There in Religion?" What has it meant in the life of the race? How has its influence for good and for evil asserted itself in the rise and fall of the civilizations of the past? What does it mean in the life of the individuals of today?

ANSWERS ARE NON-SECTARIAN

The answers to these questions are as broad and as removed from any sectarian bias as are the subjects of anthropology, history and psychology. They bear the same relation to the development of a strong and vital religious feeling that the study of fine arts does to an appreciation of the beautiful. They are the scaffolding from which the youth of today may build a temple as solid and as aspiring as the scaffolding itself will allow. And the stimulation of our students to consider these questions is as pertinent a part of a college education as any subject in our curriculum.

SUBJECT MATTER FOR STUDY

There is a definite and abundant subject matter to present in the objective study of the nature and function of religion in human experience. For example, one may analyze the early forms of religion and the primitive religious consciousness, with all its myth, magic and ritual. The distinctive contributions to religious life made by the more influential traditions of the past may be critically surveyed, as, for example, the Greek gods, Buddhism, the Mosaic Law, the prophets of ancient civilizations, as well as the early forms of Christianity and the medieval mystics.

An important feature of such a study must comprise an analytical as well as an historical point of view, and it would be well to emphasize contemporary as well as historical religious ideas and practices. For example, an analysis and evaluation of contemporary religious practices and forms of worship, a study of their basis in the verities of human experience, their relations to the fine arts and to the life of the imagination affords an abundant field for objective and stimulating study and thought.

One cannot omit a discussion of the fundamental concepts of religion, and the problems that are connected with them, such as the various ideas of God, faith and salvation. In a large city the various churches may be visited in order that the students of one faith may become familiar with the form of devotion which is practiced by others.

WAY PAVED FOR DETAILED STUDY

A general orientation of the kind just outlined naturally leads the way for more detailed study and investigation, and a comparison of the great religious movements in history, as well as a study of the psychological aspects of the subject. Although much of the work must be chronological in treatment, it is primarily concerned with values rather than with origins. The result of the work that has been done at Columbia is to bring about not only a tolerance of but an interest in other people's religion, as well as in one's own.

INSTRUCTION DIFFICULT

It should be remarked in passing that instruction in such a course makes heavy demands upon a teacher. The instructors must be developed for this work. Clergymen out of a job will not do. Only a person with a deep and broad religious sense, a feeling for youth, a scholar's temperament, and the power of clear expression can expect success in this field.

The broad treatment of religion as just indicated does not need to disturb one's allegiance to any creed or faith. In our experience, Protestants, Jews and Catholics acquire a renewed appreciation and critical understanding of their own faith and its possibilities because of the knowledge of the place of religion in society and in the life of the individual.

AIM NOT DEVOTIONAL

This method of presentation is not aimed specifically at the devotional life of the student. For the reasons that I have given earlier, it is impossible that either the public or the great private institutions should direct their instruction directly at the cultivation of the personal devotional life of their students. And even if they did, the result would be a failure. There is nothing that repels the average college student more promptly and completely than propaganda of this kind in a college course. So far as the function of religion as a subject of college study is concerned, the enrichment of the personal religious life of the student is second to the intellectual stimulation which follows that study. But even if one's real desire was to bring about a personal awakening to religious values in everyday living, I am sure that this channel of approach is the most effective in the long run.

Men do not put new wine into old bottles. We live today in a new age. Truth and goodness and beauty come to us in forms often unfamiliar. If we try to confine our presentation of these fundamentals in the old formula, nothing worth while will happen. When new wine is put in old bottles the bottles break and both wine and bottles are wasted. We

should not throw away our old wine that is in the good old bottles. But we actually have new wine in the new attitude of our younger generation. It may be that the method of approach to religion for our colleges, which I have outlined, will not affect directly the personal and devotional life of our students, but even in cases where it does not, it will certainly strengthen their education and ultimately enrich and vitalize their religious life.

HERBERT E. HAWKES,
Dean of Columbia College.

The Claremont Colleges Plan

THE CLAREMONT Colleges plan which is now being established at Claremont, California, with Pomona College as the first unit and Scripps College as the second, although under careful consideration for several years, first became known to the general public in the fall of 1925. The plan briefly stated proposes that a group of colleges should be located in the same academic community. In a recent statement to the friends of Pomona College and the Alumni of the institution President Blaisdell defines the program of development and outlines the general principles upon which the future of the plan is being built.

The basic purpose is to combine the intimacies which are characteristic of small groups of students with the privileges which are only warranted by the presence of a much larger body of students. After a rather wide survey of conditions both in this country and in Europe, it seems increasingly clear that such combination is not only practicable but most promising of rich results and that the plan which has been more or less definitely formulated for the reorganization of educational interests in Claremont is likely to have not only a long history but an important effect upon all American education.

In the second place the plan recognizes the influence of a carefully developed environment as a most significant element in the training of youth. Classrooms, laboratories, recitations and examinations are all of undoubted necessity in any educational system, but their value is multiplied many-fold if they are reinforced by the persistent and comprehensive effort to combine these and all other surrounding influences into an environment of the greatest inspiration, which shall operate in all the hours of waking and not less, perhaps, in the hours of sleeping. Undoubtedly most American institutions have underestimated these values. They have gloried in their equipment but they have been

singularly unconcerned regarding the living conditions of students and the importance of their intimate association with aspiring and inspiring personalities. We need to recur to the early conception of English education that the college is first of all a home, obviously enriched nevertheless by the equipment and facilities of later centuries. We need to exalt the great fact that education is founded primarily in the exposure of youth to noble associates and surroundings in a carefully prepared environment of learning and character. Anything which contributes to the persistence and practice and love of clear thinking and high living should not only be welcomed but eagerly sought for as adding to the essential capacity of the college to do its true work. There should be no other principle of exclusion or inclusion. The following of this principle even to its first steps must involve the early erection of residence halls, furnished and equipped in such a way as to exert the finest influences on cultural life.

In the third place a new and great age of learning has opened upon the world and in it the college must find a new place. The old college assumed to teach men knowledge; the new college must teach the practice of learning. Up to one hundred years ago the progress of science had been slow. Even up to fifty years ago it was assumed that a young person might accumulate in college an equipment of information which should be a sufficient bank account for the subsequent years of life. On such a fund of knowledge one might go through life. The college represented the most advanced effort of organized society to contribute such an intelligent basis to life. But within these last fifty years there has come, with a steadily increasing ratio of rapidity, a vast acceleration of human knowledge. Even the most fundamental concepts of many sciences have radically changed. The short span of ten years has been sufficient to make much of the old learning antique. Men can no longer live effectively on any stock of yesterday's stored information and the result is that the college must function in a distinctly different fashion. We have only dimly sensed the new situation. It can no longer be the main purpose of the

college to contribute to youth a final body of information—a sufficient equipment of knowledge for life. Henceforth the knowledge which the college gives must always be largely transitional, and not even slowly so. The business of the college will be that of starting men efficiently on a life of cumulative and constructive learning. Its province will be that of giving to youth the love of learning, intelligence to distinguish between pretense and reality, between superstition and truth, between inability and progress as both of these appear day after day, and then the capacity to appropriate that new learning into the structure of personality and of society. To this development of learning the World War has, of course, given immense impetus. But it has been by no means the only, and perhaps not even the principal, influence toward the vast inflowing of information on which every youth now launches his boat.

How much this means to the college only the development of years can show. No one can now be so bold as to anticipate the exact form of the new American college in this opening province in the new age, but it will certainly appear that a college is missing the goal unless it introduces men into the life-long passion of thinking, reading and intellectual exploration. The college will be largely a failure unless its graduates come to see that life as long as it lasts is fundamentally the opportunity to learn and to live in enlarging measure by the aid of this clearer and vaster light.

It now seems fairly clear that the new conception of the function of a college, whatever this may involve, has come to stay. The new order, in many cases not understood nor even apprehended, is slowly but surely taking form. That it will change the whole face of the American college and that it will make the college course more distinctly an awakening into personal initiative I cannot doubt.

Under the general plan which has been thus outlined Pomona College retains its present limitation of numbers together with independence of control and organization. It serves as the first unit of these affiliated colleges while Scripps College for Women, an institution of collegiate grade

and of somewhat unique character as regards the plan for curriculum, serves as the second unit. The latter is in close proximity to Pomona College, taking its place on a general campus of some 500 acres which has been most fortunately secured. Scripps College has its own Board of Trustees, its own instructional staff and enjoys a considerable opportunity of exchange of educational facilities with Pomona.

In addition to the founding of Scripps College the plan contemplates the possibility of increasing the group by a third unit and indeed there is no reason why the development need stop at that point, although the main objective held in view is not so much that of making this association a large one as it is that of making it a resource and a stimulant by way of honorable competition to better forms of educational effort and achievement. Special emphasis is placed on the development of such living conditions as assure the great advantages of personal acquaintance and helpful associations which are the peculiar privilege of the small college.

In order that the two institutions, Pomona and Scripps, together with such others as may be established, shall cooperate in matters of mutual concern, a central organization was incorporated on October 14, 1925, the thirty-eighth anniversary of the founding of Pomona College. The central organization is known as Claremont Colleges. The governing body of Claremont Colleges serves as a clearing house in matters affecting the mutual interests of the several colleges established. It also maintains a general library, certain special laboratories and such other facilities as are used in common. The plan has in mind that this central body may find it desirable to administer, with the cooperation of the several colleges, some of the general examinations for honors or for degrees. It also suggests the promotion of scholarly standards by means of intercollegiate competition when two or more institutions, each with its own organization, personnel and policy are located side by side in the same physical and academic environment.

While the proposed arrangement will perhaps in some measure help Pomona meet the insistent pressure for admis-

sion which has been on it for the past few years, it is, nevertheless, felt that the increased efficiency which may result from this plan will probably increase the demand for admission. The main object of the plan, therefore, is that of really contributing to the increased efficiency of higher education. It is hoped, however, that the plan will prevent the obvious waste which is inevitably involved in the too common practice of establishing small and weak institutions, each trying ineffectually to duplicate the other in small and widely separated localities. The aim will be to bring together the resources of all such institutions into one combined and efficient undertaking, while preserving at the same time the individuality of the separate units.

Until recently there have been two general plans of higher education: one, that instruction be given in large numbers—this implies the university idea; and second, that instruction be given in isolated colleges which attempt to duplicate, in some measure, all of the advantages of the larger institution and at the same time are unable to secure the facilities needed. The Claremont Colleges plan is a compromise between the two. It will undoubtedly be more expensive than the first plan, but it should be far more efficient than either.

Although the project has been compared in popular discussion to the general plan of the older English universities, no effort is being made to copy the organization of any other institution but to develop step by step in American terms the application of the forementioned general principles to the best interests of higher education. In many important respects the adventure of Pomona College will be strikingly different from anything which pertains at present in the old world or the new. It will, however, call for an increased emphasis upon the living and residential association of students together with the general purposes of securing the facilities and resources of a large group of students while preserving at the same time the intimacies of smaller numbers.

GEORGE W. SAVAGE.

Cooperative Education

IN THE SPRING of 1924 the American Council on Education began a cooperative experiment to test the validity of psychological tests in appraising the probability of success in college work. There was first organized a volunteer committee of five psychologists, each of whom had made significant progress in this field at his own institution. These experts pooled their findings and produced a single test blank embodying the best elements of all previous tests. Some four hundred colleges were informed that this test blank could be purchased for six dollars a hundred and were invited to use it and to send their scores to the Council for statistical reduction. A grant of \$5,000 from the Commonwealth Fund provided funds for the first year's work.

Altogether 121 institutions responded. The test was given to 47,000 students and the scores sent in for compilation. A preliminary report was made the following April, showing each institution how its students compared with those of others on a scale that was objective and the same for all. Each institution made its own interpretation of the results, drew its own conclusions, and acted as seemed to it most appropriate to local conditions. The expert committee, on the other hand, used the results to judge the validity of each section of the test, discarded those portions that did not prove effective, and produced a revised test that should yield more reliable results. This revised test was given in 1925 to 72,000 students in 197 colleges.

This enterprise is significant, not only because it leads to more reliable tests, but also because it is a practical method of helping teachers grow in mastery of their profession. Every individual who does the work at one of the participating institutions is virtually enrolled in a national seminar, the members of which are helping one another educate themselves under guidance of an expert committee. These

experts design and perfect measuring instruments that enable a teacher to evaluate the results of his own labors on an impersonal scale. Each cooperating institution buys them, tries them, makes its own interpretation of the meaning of the results under its peculiar conditions, and reports findings for the benefit of all. Hence, the process is called cooperative education. Once started, such an enterprise soon becomes self-supporting.

Similar cooperative experiments with tests for progress and achievement in learning foreign languages are being made under supervision of the American Council's Committee on The Modern Foreign Language Study operating on a grant from the Carnegie Corporation. The research and development work of perfecting these testing instruments will need financial support for several years yet, but the enterprise will eventually become self-supporting through sale of the test blanks, which are already proving to be valid instruments of measurement, analysis and comparison.

For years educators have been helping one another grow by conferences at meetings of educational associations, by monographs in their numerous journals, and by reports of surveys or of other progressive achievements. All these methods possess obvious values which warrant their vigorous continuation, even though progress by their use is haphazard and therefore slow. Recent rapid development of objective methods of appraising school work indicates, however, that substantial progress is materially accelerated by placing in teachers' hands instruments of measurement and analysis that enable them both to discover for themselves their own difficulties and to evaluate their own results in such terms as to make them comparable with those of other teachers. Such instruments also make possible definition of standards of intellectual achievement which may be used to motivate intellectual development as athletic records motivate physical development. By their intelligent use, learning may be made a challenge to the sporting instinct.

Practice in using such instruments and standards of

achievement also lessens the temptation to imitate—to transfer administrative or operating devices directly from one environment where they work well to a different environment where they work badly. The cooperative experimentation made possible by these instruments stimulates resourcefulness in discovering how to find answers to local problems and how to create procedures appropriate to local conditions. It impels a teacher to action that demands constant and persistent thought about the things he daily does, sees and handles. It thus gives discipline in facing facts and in team play, without unduly limiting individual freedom. Therefore it is rapidly supplanting the older methods of securing orderly administration by regulations, by syllabi, or by legislation based on committee reports and recommendations.

The cost of starting and conducting effective cooperative education of the sort just described is insignificant in comparison with the value of the results secured. An expenditure of about fifteen thousand dollars a year for one or two years may easily stimulate cooperating institutions to spend themselves several hundred thousand dollars worth of time and energy in local studies and experiments that lead to invaluable improvements in education. The process results in decentralized responsibility and operation, stimulated and enlightened by voluntary cooperation with a competent group of experts. It tends to substitute control by facts for control by authority or tradition. It is, therefore, both scientific and democratic; that is, wholly in harmony with American temperament.

Most of the problems of college education are splendid topics for cooperative education of the sort just mentioned. The Report on Personnel Procedure in Education by President L. B. Hopkins, just published as the supplement to the *EDUCATIONAL RECORD* for October, 1926, defines several such problems with which a number of universities are now struggling independently. All could be mutually helpful by cooperation in these studies and experiments. The committee in charge of this report recommends the following as

particularly timely and as likely to yield significant results if attacked by the cooperative methods explained above.

1. The development of personnel record cards. What objective facts of individual experience in addition to academic grades are sufficiently significant of personal interests, temperament and character to warrant recording them as guides for selection of studies in college and for choice of future occupation? In terms of what units shall these facts be recorded? How do interpretations of these facts check with subsequent experience?

2. The development of achievement or placement tests. This involves the extension of the work of the Modern Foreign Language Study into other fields. It requires stimulation of a number of institutions to create tentative tests and cooperation among them in testing these instruments of measurement and in gradually determining reliable standards of proficiency.

3. The development of personal rating scales. What subjective estimates of personal traits are worth recording? What is the relative validity of the numerous available methods of revealing and estimating traits? What forms of interview yield reliable results? How standardize terminology so that records are generally understandable?

4. The collection and interpretation of occupational information. What types of occupational information are significant to colleges? How proceed to secure, digest and apply the needed information? Cooperation in this matter is particularly necessary. If every school tries to gather this information for itself, industry and professions will be swamped with a mass and variety of requests which cannot be answered. Conversely, such information is more valuable for education the more comprehensive it is and the greater the variety of occupations from which it is secured.

A good deal of excellent preliminary work has been done on every one of these subjects at a number of different institutions. For example, Brown has experimented extensively with personnel record cards. Iowa has produced effective placement tests in several subjects. Purdue has

developed interesting rating scales. North Carolina is trying to gather the vocational information it needs both for guidance of students and for curriculum revision. Other institutions working on these same subjects hear of the work done at Brown or Iowa or Purdue or North Carolina only if they happen to be represented at a meeting of the particular education association where reports on the work are presented or if they happen to read the particular journal where the reports are printed. Under present conditions it is a long and tedious process for a teacher to orient and develop himself to the point where he is able to make constructive contributions to educational practice. Cooperative education as here described is a means of hastening the process. It is a method of guiding and vitalizing the process of self-education, by bringing workers in a particular field into cooperation and by focusing their attention on a critical evaluation of their own work as a basis for improvement. The process is fundamentally the same as that by which everyone is gradually being educated all the time by his experiences and his reactions to them. The advantage is that the process is speeded up by organized cooperation. There is less floundering, less dissipation of energy, less hair-splitting argument, less baffled groping, and more constructive optimism based on the sense of achievement that comes from mastery of facts.

In order successfully to inaugurate cooperative education in each of the four projects under consideration it is necessary to create a small committee of experts to design the tools with which to begin work and to supervise the project. A provisional record card, or achievement test, or rating scale, or form for occupational information must be prepared and submitted to cooperating institutions for trial, criticism and improvement. The success of the experiment depends on the skill with which these preliminary tools are constructed. Therefore the expert committee must be competent, and it must be free to give adequate attention to its task. This means travel and hotel bills for conferences lasting several days, and honoraria for experts who

devote a major portion of their time to the enterprise.

After the preliminary experimental tools are ready, some agency must distribute them, answer inquiries about them, visit cooperating institutions, and compile the reports on their use. This requires full time service of at least one expert of experience operating from some central headquarters. The office of such an expert would soon become a center of information which could answer promptly the many inquiries now sent here and there by colleges to individuals and to particular institutions.

Because the foregoing cooperative experiments and the concurrent development of a central information service are obvious next steps in improving personnel procedures in education on the basis of the Hopkins report, the committee responsible for this report, at a meeting on November 8, 1926, unanimously endorsed the foregoing program and recommended that the American Council on Education act as the central headquarters and seek to secure the financial support needed to develop it until it becomes self-sustaining. It is estimated that it will cost \$25,000 a year for three years to do this.

The four projects in cooperative education cannot be limited to college work. Thus the personnel record card is much more illuminating if it records significant facts from childhood and pre-college days. Employers of college graduates are also much interested in such records provided they contain the sort of information which employers find indicative of success in their own businesses. Therefore the preparation of such a record card requires cooperation of the college with preparatory schools on the one hand and with post graduate occupations on the other. The cooperation needed does not consist of exchange of friendly advice from each as to how to run the other's job. It does consist of a joint effort to analyse a very complex situation and discover what are really significant facts and how these may best be recorded.

With achievement and placement tests, colleges have had more experience than has industry. On the other hand,

industry has experimented with rating scales vastly more than have the schools. Both of these projects, therefore, offer exceptional opportunities for far-reaching cooperative education.

During the past year a number of colleges have become aware of the importance of reliable vocational information to intelligent personnel service in college. Last October representatives of all the New England colleges held a conference on this subject at the Massachusetts Institute of Technology. So much interest was manifested that a second conference of the same group is called this month at Amherst. The Yale Placement Bureau in cooperation with the American Management Association arranged a similar conference in November which resulted in a second conference on ways and means of practical progress in securing and distributing suitable kinds of reliable occupational information. In the most important phase of this project of vocational information, cooperative education is already at work. For the job specification has been developed into a reliable instrument of record and analysis by the use of which employment managers are educating themselves and one another on their daily jobs. Experience is showing that properly drawn job specifications are the essential foundation for intelligent and just wage scales and systems of promotion, for sound training programs in industry, for valid progress and proficiency tests, and for vital standards of proficiency. They also contain information which schoolmen have long needed as a basis for rational adjustment of school practices to present social and economic conditions.

Because properly constructed occupational specifications are very incisive tools for digging up real facts that are vital for educational and industrial progress, the American Council on Education has organized another cooperative experiment which offers rare educational opportunities both to industrialists through making such specifications and to educators through using the facts unearthed by them. The expense of the preliminary work required to develop a practical form of job specification that meets all the requirements

both of industry and of education have been met partly by the Council, partly by the cooperating industries and partly by a grant of \$12,500 from Mr. John D. Rockefeller, Jr.

The model form of job specification thus prepared is being tried out by eleven large industrial organizations. Already some 2,000 specifications have been written covering a wide variety of occupations ranging from laborer to educational director and general counsel of a large company. Preliminary analysis of these specifications shows that there are many elements of skill and knowledge that are common to a number of different occupations. These common elements are being tabulated and classified for presentation to schools and colleges as specific suggestions of subject matter that might profitably be woven into curricula. In addition to these common elements, job specifications also contain a large array of concrete cases and problems that enrich the teacher's range of real situations and illustrative material for many regular specialized courses in science, in economics, or in psychology.

The analysis of occupational information to discover significant subject matter for instruction applies to every grade of school work. Since the American Council on Education is concerned primarily with higher education, a special Committee on Materials of Instruction has been recently organized by the U. S. Commissioner of Education to make a critical analysis of all phases of American life, including occupational requirements. This committee has formulated several projects in cooperative education and is seeking the support needed to create the preliminary tools with which to begin experimentation.

It is clearly recognized by everyone engaged in this program of cooperation between industry and education that occupational information covers only one sector of the whole problem. Another and perhaps larger sector comprises social, civic and artistic activities. Here the analysis to discover common elements of significance to school practice is more difficult and elusive. Nevertheless, a hopeful beginning has been made by a committee of the American His-

torical Association. Analysis of the sector that includes professional education in medicine is also progressing under direction of the Commission on Medical Education of the Association of American Medical Colleges.

Everyone will recognize that the projects under discussion are but special cases of the general personnel problems of discovering individual capacities and releasing them in constructive work. Because those mentioned are specific, relatively simple, and already partially solved, it seems practical to begin with them in developing the cooperation between industry and education provided for by the Council's action in making industrial organizations eligible to institutional membership. The Executive Committee is, therefore, inviting industry to work out the details of cooperative relations on these special cases.

It is clearly understood that in developing this plan of cooperation, business men are not expected to tell teachers how to operate schools, nor are schoolmen invited to tell industrialists how to carry on the world's work. Each supplies to the other information which the other needs for intelligent action, but leaves it to the other to make wise use of that information in his own work. That the information thus exchanged may be mutually helpful, there must be frequent conferences between business men and teachers on questions of form and nature of the information exchanged. For example, the kind of record of achievement that pleases a teacher may be utterly useless to an industrialist. Experience with job specifications shows that it is possible to discover by conference things worth recording that are significant to both.

The financial aspect of this enterprise is impressive. The American people spend annually over \$2,000,000,000 on public education. If only 1 per cent of the time and energy involved were transformed from wasted effort to productive work, it would mean a salvage of \$20,000,000, not to mention the effect on the students. Cases are on record where the percentage of students who achieved measured standards of proficiency has been doubled and the time required has been

largely reduced by the methods here proposed. In the process the spirit of the students has been transformed from one of discouraged failure to one of hopeful mastery.

Similarly business and industry have a large stake in this enterprise. The losses from breaking in new men, from misfits, and from turnover are known to be enormous—\$1,000,000,000 a year is a conservative estimate. Experience has shown that well-made job specifications alone reduce these losses. The foregoing plan contemplates a long range program that is sure to reduce these losses more and more each year as significant material from daily experience is introduced into school curricula and as testing and training programs founded on job specifications are gradually perfected.

American business and industry now recognize that their efficiency and productivity have been enormously increased by scientific research, by large-scale production, by labor saving machinery, and by elimination of wastes in processes of manufacturing and distribution. These fundamental procedures have produced tangible results. American industry has reached a position of recognized supremacy and is looking for additional means of progress.

The most promising single source of power for further progress in productivity and public welfare now seems to be the vast reservoir of latent human energy that has not yet been released and guided into useful channels. Hence industry and business are very ready to apply to the so-called "manpower" or "personnel" problem the same technique that has proved so effective on the material side of production.

Two searching practical questions that must be answered in solving the manpower problem are, from the standpoint of management: What must be done? Who can do it? From the standpoint of any individual, these questions take the form: What can I do best? How can I find opportunity to do it? In either case answers to these questions are dependable in proportion as we have reliable facts concerning the requirements of occupations and valid means of appraising men. Hence, the extraordinary opportunity for

cooperation between industry and education—one furnishes the needed occupational information and the other develops valid means of appraising men. Each profits enormously by doing its share of the work and at the same time gives great aid to the other. Both grow progressively stronger, increase in power of achievement, and advance together toward competency and contentment. It is an excellent sample of cooperative education.

The recent rapid development of cooperative enterprises in education has done more than evolve a telling technique of cooperation as just described. It has created the necessity for an adequate national headquarters for this work. Business and industry have already recognized that national organization for cooperation is essential to sound growth and individual freedom in America. They have established the Department of Commerce and the U. S. Chamber of Commerce and these have now in operation over a thousand expert committees working by the technique of cooperative education in the interests of commercial progress. The greatest single opportunity for conspicuous national service lies in the foundation of homologous national cooperative agencies for education.

C. R. MANN.

Study of Student Personnel at Minnesota

THE SUPPLEMENT to the EDUCATIONAL RECORD for July, 1926, contained three reports describing the work of several faculty committees which are studying the actual functioning of education at the University of Minnesota. In addition, the Senate Committee on Education has recently appointed four sub-committees to determine what should be done by the university to improve its effectiveness during the first two college years. These sub-committees are dealing respectively with dormitories, curriculum, organization, and student personnel.

Because of the interest aroused by the Hopkins Report on Personnel Procedure in Education, published as Supplement to the EDUCATIONAL RECORD for October, 1926, it seemed that the plan of work of the Sub-committee on Student Personnel at Minnesota might prove suggestive to other institutions desiring to make further progress in this matter. The sub-committee has kindly permitted its tentative program to be printed in the EDUCATIONAL RECORD for this purpose. The members of the sub-committee are: Donald G. Paterson, chairman; E. G. Williamson, secretary; Clara M. Brown, H. F. Diehl, J. B. Johnston, L. H. Reyerson and Vernon Williams. Its program follows:

The major questions for consideration are:

1. What is student personnel?
2. What functions are involved in student personnel work?
3. What agencies exist for: analyzing these functions, developing these functions, administering these functions, coordinating these functions?
4. Should personnel work be centralized or decentralized? If decentralized, how coordinated?

GENERAL OUTLINE OF PROCEDURE

First Step: Prepare a functional chart of student personnel work to outline the scope of the work. D. G. Patterson and E. G. Williamson.

Make a survey to determine the extent to which these functions are being exercised in our present university organization.

Second Step: Prepare reports on the present status and next steps for the initiation, extension, improvement and coordination of various phases of student personnel work.

Third Step: Tie these reports together for formal presentation to the Committee on Education and dissemination throughout the university.

Preliminary Outline of Reports to be Made under the Second Step of the General Procedure together with Designation of those Responsible for Making these Reports.

Project 1. The Necessity for Educational and Vocational Guidance in the High School. Dean J. B. Johnston.

Suggested available sources for report: C. W. Boardman's Report on Committee of Seven; J. B. Johnston's articles and reports showing the need for such guidance; present experiment in surveying high school senior classes looking toward extension of guidance in the high school through university initiative; facts about need for substantial scholarships to encourage gifted high school students to continue their education. Status of present work, recommendations for extending this work.

Project 2. Personnel Information to be Secured from Students at Time of Admission. D. G. Paterson.

Suggested material: Reports of Sub-committee on Student Personnel Record Card of University Committee on Educational Research; Report of Committee on Centralizing a Collection of Personnel Information; Status of this phase of personnel work; recommendations.

Project 3. Measuring Aptitude for College and for Specific Curricula and Courses. D. G. Paterson.

Suggested sources: Reports on College Ability Tests, High School Scholarship Ratings, Placement Tests: What is being done? What remains to be done? Next steps.

Project 4. Provision for Individual Differences through differentiated curricula; semi-professional courses, courses less than four years in length, honors courses, quality credits, certificates for successful completion of Junior College work, differentiation of instructional staffs with needs of Junior College students as a criteria, sectioning of classes on basis of ability. J. B. Johnston.

What is being done? What steps are deemed wise and necessary? (Note: This report will serve to coordinate the inquiry on student personnel and the curriculum investigation.)

Project 5. Educational and Vocational Guidance for Undergraduates. J. B. Johnston and D. G. Paterson.

Work of the Educational Guidance Committee for Freshman Week; Vocational Adviser for Women; Science, Literature and Arts Committee

of Faculty Counsellors; Upper classmen Advisers, Research efforts to discover the guidance significance of the curriculum in terms of specific courses and combinations of courses. Educational and Vocational Guidance Bulletins issued by the university.

Status of present efforts, recommendations for extending and improving the work. Should a qualified vocational adviser for men be provided?

Project 6. Improving Our Examining and Grading System as a Necessary Step in Basing Guidance in Part upon Achievement in College Courses. Clara M. Brown.

Suggested points for inquiry; Utilization of results of research of Sub-committee on Marks; Extent to which New Type Examinations are being used in various courses, Wood's survey of examining procedures in colleges in the United States. Next steps in bringing about needed improvements.

Project 7. Extent to Which Extra-curricula Activities Facilitate or Inhibit Adjustment to College Life. Vernon Williams, W. M. Anderson.

What agencies exist for studying the educational significance of fraternities, sororities, athletics, clubs, societies, publications, dramatics, music, etc.? What agencies exist for controlling these activities to insure maximum educational returns? Recommendations.

Project 8. Extent to Which Financial Aid and Opportunities for Employment Are Facilitating the Adjustment of Freshmen. Vernon Williams.

Are sufficient funds available? Is employment service adequate? Recommendations.

Project 9. Student Health and Mental Hygiene. H. S. Diehl, A. W. Morrison, T. Wheeler, E. Heidebreder.

Problem of student health, extent of need for mental hygiene methods of detecting mental hygiene cases, available facilities. Recommendations for next steps.

Project 10. Educating Members of Staff on Problems of Student Personnel. J. B. Johnston.

Faculty Bulletin, course on Problems of College Education, Faculty meetings, Lectures. What is being done? What remains to be done? Recommendations.

Project 11. Analysis of S. P. E. E. Investigation Report. L. H. Reyerson.

What are the outstanding facts about student personnel disclosed in this report? What recommendations are made in the report? What application of the findings can be made at Minnesota?

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SUPPLEMENT

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Standard Terminology in Education

BY

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AMERICAN COUNCIL ON EDUCATION

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Copies of this document may be secured
from the
AMERICAN COUNCIL ON EDUCATION

Standard Terminology in Education

ALTHOUGH words are the tools of teachers, their daily medium for the communication of ideas, yet even teachers of languages, who might be expected to show sensitiveness to the requirement that a word to be in good use must be in present, reputable and national use, have endured, for generations, a deplorable confusion in their own field due to a multiplicity of terms. A Joint Committee on Grammatical Nomenclature appointed by the National Education Association, the Modern Language Association of America and the American Philological Association, reported in 1913 that there were nine different names in twenty-five English grammars then used in the schools of the United States for the idea represented in the term "subjective complement" to describe the grammatical relationship of the word John in the sentence: "This is John." A similar confusion in the use of educational terms owing to use of several names for one thing or one word for different ideas in 1908 led the Association of American Universities Special Committee on University Nomenclature, of which the members were President C. R. Van Hise of Wisconsin, Chairman, President A. Ross Hill of Missouri, and a representative of Princeton to declare "that universities, the institutions which are supposed to systematize and advance knowledge, which ought to illustrate the principles of education in their organization as far as practicable, have permitted without protest a hopeless confusion of nomenclature which would not be tolerated in any of the sciences." (Proceedings of the Tenth Annual Conference of the Association of American Universities, 1909. Report of the Special Committee on University Nomenclature, p. 68.)

The following trial list of terms has been gathered from the reports of such committees as the one just named, from

the publications of educational foundations and associations, from the writings of persons of some authority in the field, and more recently from the statements prepared by nearly four hundred universities and colleges for the volume on American Universities and Colleges which the American Council on Education has in preparation. Inasmuch as this volume is intended primarily for the use of foreign students of our educational institutions every word requiring interpretation has had to be challenged by the editor. Some of them are given herewith; occasionally with a quotation to indicate a meaning; frequently with several to illustrate more than one meaning in use; and sometimes with a definition framed to challenge the attention of local users of the word. Perhaps enough are presented to suggest that now, as in 1908, there is confusion—though not a hopeless one.

Indeed, the situation, always difficult, has engaged a hopeful consideration by many persons and organizations. The President of the Carnegie Foundation for the Improvement of Teaching has frequently discussed educational terms in his annual reports, as quotations in the following pages will show. In a report to the Committee on Standards of the American Council on Education, Prof. Adam Leroy Jones of Columbia University called attention to several efforts in the direction of a standard terminology in education. The aforementioned Special Committee on University Nomenclature reported to the Association of American Universities in 1909 and 1910. An identical report was presented in each of these years to the Association of State Universities by a committee of which President Van Hise and President Hill were members. In 1918 the National Conference Committee on Standards of Colleges and Secondary Schools recorded the adoption of a report regarding certain terms recommended by a committee appointed at the instigation of the Commissioner of Education, Dr. P. P. Claxton. A Committee on College Entrance Requirements of the National Education Association presented a report in 1899. A report on High School Terminology was presented to the National Commission on the Reorganization of

Secondary Education at its meeting in Richmond, Virginia, February 25, 1914. These definitions were printed in the EDUCATIONAL REVIEW for March, 1915, and were printed as a chapter in a volume by the late Prof. Charles Hughes Johnston: "Junior-Senior High School Administration." In 1917 the Commissioner of Education issued in mimeographed form a list of about one hundred terms, a list from which many of the following items are drawn. The Board of Education for Librarianship in 1926 was concerned with definition of educational terms in its publications. The National Education Association recently appointed a committee on the Coordination of Research Agencies, with duties including that of making an index classification of educational writings. A subcommittee of which Prof. Thomas H. Briggs of Columbia University is chairman found it necessary to obtain a uniform definition of terms to be used for headings before it could undertake a satisfactory classification. Consequently, another committee was created to serve as a judge of terms submitted to it. Dr. J. W. Withers of New York University is chairman of this committee. The Committee on Standards of the American Council on Education has a sub-committee on terminology: Adam Leroy Jones, Columbia University, chairman; Thomas H. Briggs, Teachers College, Columbia University; and David A. Robertson, Assistant Director of the American Council on Education. This committee has hopefully undertaken to reduce some of the confusion by discovering present usage among educational leaders of this country and, if possible, by reference to such organizations as may be accounted authoritative, to bring about a closer approximation to agreement regarding use that is present, reputable and national, or even international.

It is suggested, therefore, that current use of these words in the university and college centers of the United States be studied. Perhaps the Professor of Education will be willing to discuss some of the problems with his own students; possibly the teacher of English composition or the instructor in argumentation or the Professor of Logic will find herein material for class exercises in making definitions. And

perhaps these will report the local definitions with illustrative quotations to the undersigned at the American Council on Education, 26 Jackson Place, Washington, D. C. Suggestions as to additional terms requiring study should be included. Such a useful body of material can then be studied by the Committee on Standards.

ACADEMIC.

In general, pertaining to schools and colleges: as academic year, academic status.

In a narrower sense, pertaining to the college of liberal arts and sciences in contrast with professional or technical; as academic degree (meaning Bachelor of Arts or Bachelor of Philosophy or Bachelor of Science); academic credit (credit toward the academic degrees just mentioned), academic subjects (to the exclusion of music, drawing, home economics, agriculture, secretarial training, etc.; used especially in specification of admission units).

ACADEMY.

A secondary school.

A secondary school placing emphasis on training in the classics; a Latin High School.

An institution of higher education with admission requirements equivalent to those of a college and in which special training is offered: United States Military Academy (West Point); United States Naval Academy (Annapolis).

"An association of literary men, artists, scientists or the like combined for the promotion of literature, art or science." New Standard Dictionary, 1913.

ACCREDITED. APPROVED. CLASSIFIED. RATED. STANDARD.

An institution meeting the requirements of a standardizing organization—the Association of American Universities, or one of the regional associations, the North Central Association of Colleges and Secondary Schools, the Association of Colleges and Secondary Schools of the Middle States and Maryland, the Association of Colleges and Secondary Schools of the Southern States, and the Northwest Association of Schools and Colleges. In addition to the foregoing associations, a State Department of Education and a State University may issue lists of approved institutions of the state; there are also lists prepared by church boards of education, e.g., the Board of Christian Education of the Presbyterian Church in the United States and the Catholic Educational Association. Professions likewise issue lists of institutions which meet certain requirements in preparing for the profession: e.g., the American Bar Association and the Association of American Law Schools, the American Medical Association, the American Pharmaceutical Association and Association of Schools of Pharmacy, the Asso-

ciation of Teachers' Colleges, the Association of Collegiate Schools of Business, the Board of Education for Librarianship, etc.

It is to be noted that any list made by any single person or institution is likely to be used by some interested party as an "accredited list" even if accrediting in the usual sense is expressly disclaimed. The Department of Labor, for instance, has issued a list of educational institutions approved for the purpose of admitting bona fide non-quota students in accordance with the Immigration Act of 1924; the Department emphasizes the fact that this list is for use in administering the cases of immigrant students, and declares that the list is not to be used as a list of institutions the educational character of which has been approved by the Department of Labor. Even institutions like Oriental University, a fraudulent institution formerly existing in Washington, D. C., have formed an association with a name approximately that of one of the above named standardizing associations, and have advertised themselves as "accredited," presumably by this association. It is always important to know by whom an institution is accredited.

ADULT EDUCATION.

ADVANCED COURSES.

Apparently a relative term at present used in regard to both college and graduate courses. Usually used in connection with a statement of degree requirements and particularly in regard to courses which may count in a major, courses of progressive difficulty for admission to which some preparatory training in the department is a prerequisite. See Limited Credit Course.

ADVANCED STANDING.

Credit allowed toward satisfaction of degree requirements for work done in another institution. Full credit is usually granted when the institution from which the student presents credentials has been approved by the Association of American Universities; when the institution has not been so approved, the amount of advanced standing so allowed is frequently reduced, or additional requirements for the degree are laid upon the student.

AFFILIATION.

"A. . . . school shall be. . . . affiliated with an approved library or college." Board of Education for Librarianship.

A relationship existing between independent educational corporations for mutual advantage and with varying degrees of closeness. Professional schools have commonly been affiliated with colleges in the development of universities. Colleges are affiliated with each other: e.g., Claremont Colleges. Colleges are affiliated with universities: e.g., The Catholic University of America and affiliated colleges.

ALUMNUS.

A person who has received a degree from an institution. At times

alumni associations have included only holders of college degrees (B.A., B.S.), but now generally include holders of higher degrees (M.A., Ph.D., etc.), sometimes organized in separate divisions of the general alumni association. There is a growing tendency to include all former students, a tendency which has been strengthened in recent years of money raising campaigns.

APPRENTICESHIP.

"Is a term used to include all forms of systematic vocational education through the participation of the learner, under the direction of skilled workers, in the actual work of various productive occupations."

Committee on Vocational Education, National Education Association. Vocational Secondary Education. U. S. Bureau of Education, Bulletin No. 21, 1916.

"A system of training for librarianship consisting predominantly of practice under direction: To be accredited the class must be conducted at an approved library, require for admission graduation from an accredited high school, and extend over at least eight weeks." Board of Education for Librarianship.

ASSOCIATE PROFESSOR. Cf. Adjunct and Assistant. See Professor.

A member of the instructional staff of a college or university sometimes appointed for a definite period and sometimes indefinitely, ranking just below a professor and sometimes below an adjunct professor.

ATTENDANCE.

"Number of pupils present (on any given day or at any given time)." National Education Association, 1892, p. 737.

AUDITOR.

Financial officer of an institution with functions approximating those of Comptroller or Treasurer.

Financial agent, usually a Public Accountant, independent of institution, engaged by trustees to examine accounts of institutional officers and to report on accuracy of the annual or occasional statement of financial condition.

Listener, guest, visitor. Used by Board of Education for Librarianship. A person permitted by administration to attend lectures and recitations without participation in work of class. Where no fee is involved such a person is usually not registered or included in statistics. When a fee is charged, such persons are sometimes listed among "special students," and sometimes are named separately in figures of enrollment.

AVERAGE ATTENDANCE.

"Average number of pupils attending each day or session." National Education Association, 1892, p. 737.

AVERAGE NUMBER BELONGING.

"To a school, or system of schools, includes temporary absentees. Pupils absent for sickness or other cause, but with intention of returning

to school, are considered as belonging. This number differs from the number 'enrolled,' inasmuch as the latter contains all different pupils who have attended at any time during the year, some of whom may have been dropped from the roll of those 'belonging,' on account of death, removal from the district, protracted sickness, entrance on business, etc." National Education Association, 1892, p. 741.

BACHELOR.

Holder of a first degree in arts, science, or, in certain professional schools, the requirement for the degree including at least fifteen units for admission and three or four years of work beyond these admission requirements. In the United States, baccalaureate degrees usually are conferred on completion of a college curriculum usually of four years (three years at Clark): B.A., Ph.B., S.B. For LL.B. sometimes three years beyond high school are required. For B.D. the requirements are various, the highest being four years of college for admission, and three years of additional graduate divinity work. See report of the Committee on Academic and Professional Higher Degrees, Association of American Universities Journal of Proceedings and addresses of the Eighteenth Annual Conference, 1916, p. 65. *Ibid.*, Nineteenth Annual Conference, 1917, p. 17.

BOARD OF CONTROL.

BUDGET.

"In the case of a college, it consists of two parts: one part containing the estimated income; the other containing the appropriations for the estimated expenditures." Trevor Arnett: College and University Finance, 1922, p. 67.

CALENDAR.

An official digest of college or university regulations and announcements. More commonly used in Great Britain than in the United States, where catalogue is the commoner designation for an official annual volume of information.

"A table . . . of dates of the months numbered in their order and the dates of exercises . . . for the year; as a church or university calendar." New Standard Dictionary, 1913.

At different times suggestions have been made regarding a uniform calendar for universities and colleges. President Van Hise of the University of Wisconsin was chairman of a committee of the Association of American Universities on this subject. More recently the Association of University Professors urged its desirability especially so that university professors in all institutions might be free to attend national meetings at Christmas and in the spring. Conditions in different states and institutions—including climate, legal and religious holidays, division of the academic year and relation to the calendar of the public school system—are so various that there has been as yet little progress toward uniformity.

CATALOGUE.

"The primary function of the catalogue . . . is to inform the general public in those matters in which it desires information concerning the college, and above all to give to the prospective student fair and sufficient information from which to estimate the kind of opportunity that the college can offer him."

"Almost all of them (the college catalogues) need a more definite aim, a more rigid exclusion, a more orderly arrangement, a greater condensation, a greater clarity of thought and simplicity of style. In general it would be fortunate if there were more information about trustees and administration, less repetition of faculty names, simple statements of financial resources, more illuminating description of equipment, condensed and clarified statements of entrance requirements, schools, curricula, courses, scholarships and fees; some statement of the actual requirements enforced, courses given, and the size of classes; better classification and summaries of students, graduates and alumni; better tables of contents and indices; and always better form and style." The Carnegie Foundation for the Advancement of Teaching, Eighth Annual Report of the President and of the Treasurer, 1913, pp. 112, 124.

CERTIFICATE.

Admission by certificate: acceptance of official statement of preparatory school regarding amount and quality of a student's work in all of his high school subjects in lieu of an examination in these subjects conducted by the college.

"Granted in lieu of a degree by library schools not authorized to grant degrees or by graduate library schools on completion of the first year curriculum." Board of Education for Librarianship. See Diploma.

CERTIFICATION.

"Action taken by an authorized state or national body on the professional or technical qualifications of librarians or library workers." Board of Education for Librarianship. Used also for licensing of teachers.

CHANCELLOR.

In the United States a permanent chief executive officer functioning as president of a university as in the case of the University of Buffalo, the University of Chattanooga, the University of Denver, the University of Kansas, the University of Nebraska, Vanderbilt University, Washington University, St. Louis, or as the supervisor of all higher educational institutions in a state, as in the case of Montana, who acts on behalf of all such institutions in dealing with the state government.

CLOCK HOUR.

"A time unit of sixty minutes."

COEDUCATION.

Education of men and women without regard to sex. Coinstruction involves admission of men and women to classroom and laboratory without regard to sex, but also implies some segregation administratively and socially. Coordinate colleges are separately organized units for men and for women, the same instructional staff to a large extent serving both.

COLLEGE.

This word is used in many senses in the United States. The College of Surgeons uses the term in the sense long established in England, e.g., the College of Surgeons in London. It is commonly used by private enterprises which train in elementary commercial subjects, especially shorthand and typewriting: Business Colleges. It is also used by private organizations supplying instruction in music for pupils of any level and without relation to educational advancement: Musical Colleges. There are also Barbers' Colleges, etc. It is with the use of the term in the field of higher education that universities and colleges are concerned. Even in this field there is a diversity of use, as pointed out by the Association of American Universities Committee on University Nomenclature. *Journal of Proceedings and Addresses of the Tenth Annual Conference, 1909, pp. 67-68.*

"The word 'college' in its broad sense is illustrated by Harvard College in Harvard University, Columbia College in Columbia University, and Yale College in Yale University. At California, however, the term is used in a narrower sense, that institution having a college of letters, a college of social science, a college of natural science, a college of commerce, each of which would be included in Columbia College, or Harvard College, or in the college of letters and science at Wisconsin. At Chicago, college is used in various senses, one of which is subordinate to school, since one of the divisions of the school or education is the college of education. Another use of college is to designate a building, or group of buildings, as, for instance, Sage College, in Cornell University, a dormitory for women." (Cf. use at University of South Carolina.)

"Recommends that the term college be restricted to a part of the university the standard of admission to which is the equivalent of that required by the Carnegie Foundation for the Advancement of Teaching, and which offers instruction leading to a first degree in Arts, Letters, or Sciences." Association of American Universities. *Journal of Proceedings and Addresses of the Tenth Annual Conference, 1909. Report of Committee on University Nomenclature, pp. 67-68.*

"A 'college' is an institution requiring for admission graduation from a standard secondary school, or the equivalent, and offering a four-year curriculum leading to the first degree in arts or science, of such character as to qualify for admission to a graduate school of recognized

standing." National Conference Committee on Standards of Colleges and Secondary Schools, 11th Conference, New York, March 1, 1918. In *School and Society*, 7:480, April 20, 1918.

"A University College in England in its strict sense means an institution for the higher learning with a limited scope of instruction and without power to confer degrees. In America it either means a self-contained institution which confines itself mainly to the teaching of Arts and Science as a liberal education, and which has the right to confer degrees, or it means that part of a university which is concerned with liberal education as a preliminary to further study. Thus in a typical American university you may have the College (Arts and Pure Science) and superimposed on it the graduate (or Research) and the Professional (or Vocational) schools, not to speak, in the meantime, of a number of semi-detached and extra-mural activities." Edward Fiddes, *American Universities*, 1926, p. 9.

"The term 'college' . . . is understood to designate all institutions of higher education which grant non-professional bachelor's degrees." American Council on Education. Report on Accrediting Colleges, 1922. This report includes these criteria: Admission of students, graduation requirements, faculty, income, buildings and equipment, absence of a preparatory school, educational standards, results of inspection.

COMBINED COURSE.

An arrangement whereby the early part of a professional curriculum may be counted in satisfaction of the final part of a college curriculum, thus enabling the student to shorten his preparation for a profession. For example, a student who has completed three years of the curriculum leading to the degree of Bachelor of Arts may be allowed to register for his fourth year as a first year student in law, and to receive the B. A. degree at the end of his first year of law. Usually this is possible only when the two curricula exist in the same institution. In some colleges, however, students are permitted to go to another institution for the professional work, and to receive the Bachelor's degree at their college on completion of the first year of professional work in the cooperating university.

COMMON COURSES.

College courses usually of the first year common to several curricula. At Yale such courses are now organized as a separate administrative unit: the Freshman Year.

COMPREHENSIVE EXAMINATION.

"A comprehensive examination is understood to be one covering the whole field of a particular subject, or group of related subjects, studied during a considerable period of time." Committee on Comprehensive Examinations, National Commercial Teachers' Federation, U. S. Bureau of Education, Annual Report, Vol. I, 1915, p. 628.

CONCENTRATION.

In the organization of a college curriculum, after satisfaction of specific requirements and certain distribution requirements to assure a general basic education, students are required to pursue advanced courses in one department called the major and in a related department called the minor. This is called the concentration requirement.

CONDITION.

A deficiency in a candidate's preparation for admission to college which may cause the candidate's acceptance by the college with the proviso that the deficiency be removed within a stated period. Studies of the credentials offered by candidates for admission to college show in practice depreciation of the value of the unit as defined by the Carnegie Foundation for the Advancement of Teaching, so that high school graduates can generally offer at least fifteen units. Because of this, some institutions assert that they do not allow conditions. These same institutions, however, have permitted students to satisfy specific distribution requirements for admission, especially in foreign language and mathematics, after entrance. Clearly a condition requires, if not redefinition, a re-emphasis.

A grade assigned in a course by a college instructor usually implying an opportunity to take a second examination within a given period and usually in the absence of success on such an examination changed to the grade, failure.

CONDITIONED STUDENT.

"Conditioned students may be defined with respect to the high schools. They fall into two groups: (1) deficient students enrolled as members of regular college classes and candidates for degrees; (2) deficient students under twenty-one years of age who are admitted to college work but are not enrolled as members of one of the four college classes. It has been a common practice to count this last class as special students, but they ought clearly to be considered conditioned students; in most cases they are seeking to become regular and candidates for degrees." The Carnegie Foundation for the Improvement of Teaching. Fourth Annual Report of the President and of the Treasurer. 1909, p. 143.

CONVOCATION.

A public meeting at which degrees are conferred (Chicago, George Washington).

An assembly of all members of a university usually for the purpose of hearing an address (Minnesota).

COOPERATIVE.

A plan whereby technical studies, especially in engineering or business administration, are correlated with practical work in industrial plants or in offices. Frequently the arrangement provides for alternation of a pair of students in study and work, one studying for a period during

which the other student works in the shop or office, and then exchanging places.

COORDINATE COLLEGE.

Within a university a college for women separately organized parallel with the college for men, and using to some extent the same instructional staff and equipment.

CORPORATION SCHOOLS.

COURSE.

"Generally used for a subdivision of a subject; as, for instance, courses 1, 2, and 3, in mathematics.

"Frequently used for the entire four years' work of a student leading to a degree. This is best illustrated at Pennsylvania, where the subdivision of the work in Arts is the course in Arts and Science, the course in biology, the course in music, and of the work in applied science, which includes the course in chemistry, in civil engineering, etc. The same use is illustrated in the University of Wisconsin, where in the college of liberal arts there are the courses in commerce, pharmacy, chemistry, and the course for the training of teachers."

"The Committee recommends:

"Course be restricted to subdivisions of a subject; as, for instance, course 1 in English."

The Association of American Universities. Journal of Proceedings and Addresses of the Tenth Annual Conference, 1909. Report of the Special Committee on University Nomenclature, p. 67.

CREDIT HOUR.

A unit of degree requirements varying as to time and as to achievement measured as well as to colleges and even as to courses and departments within a given college. Cf. also Full Credit, Limited Credit.

CURRICULUM.

"That the term 'curriculum' be restricted to a combination of courses leading to a degree." Report of Committee on University Nomenclature, Association of American Universities. Journal of Proceedings and Addresses of Annual Conference, 1910, p. 91.

"The term 'curriculum' is restricted to a combination of courses leading to a certificate, diploma, or a degree." National Conference Committee on Standards of Colleges and Secondary Schools. 11th Conference, New York, March 1, 1918. School and Society, 7:480, April 20, 1918.

"Curriculum (course of study) is any systematic and schematic arrangement of courses which extends through a number of years and which is planned for any clearly differentiated group of pupils. Administratively a curriculum represents an arrangement of courses within which a student is restricted in his choice of work leading to graduation." Charles Hughes Johnston: Junior-Senior High School Administration, 1922.

DEAN.

Function and powers. See C. W. Eliot, *University Administration*.

DEAN OF THE FACULTIES.

Responsibilities and powers.

DENOMINATIONAL COLLEGE.

One usually founded by and controlled by a religious denomination through representation on governing board, requirements as to denominational relationships of trustees, president, members of the faculty or students, grants from church funds, power of approval of appointments lodged in church representatives—bishops, synods, assemblies, etc.

DEPARTMENT.

"The term 'department' is used for the major divisions of the university in a number of institutions without reference to whether they are coordinate, or the divisions made on a similar basis, as, for instance, at Harvard University, Harvard College is a department, as well as the Dental School, the university library, and the Bussey Institution. Michigan, Texas, and other institutions use the term 'department' in a sense similar to, but not identical with, that of Harvard. Thus, the work in the liberal arts, in law, and in medicine, is organized as departments. A much more general use of the word 'department' is that for the different subjects given in the university, as, for instance, the department of Latin, the department of biology, etc. As thus used, the word 'department' is equivalent to the southern use of the word 'school.'" Association of American Universities, *Journal of Proceedings and Addresses of the Tenth Annual Conference*, 1909, p. 67.

"Restricted to the various subjects taught in the university; as, for instance, the department of Latin, department of mathematics, department of physics, etc." Committee on University Nomenclature Association of American Universities. *Journal of Proceedings and Addresses of the Tenth Annual Conference*, 1909, p. 68.

"The term 'department' is restricted to the various subjects taught; as, for instance, the department of Latin, of mathematics, of physics, etc." National Conference Committee on Standards of Colleges and Secondary Schools, 11th Conference, New York, March 1, 1918. *School and Society*, 7:4801, April 20, 1918.

DIPLOMA.

Official document issued by college or university to the holder of a degree. Used also as a certificate of the right to exercise some function. There seems to be a tendency to use the word "certificate" for such documents issued by colleges to students completing a curriculum less than that leading to a degree. Diploma, however, is generally used in elementary and secondary schools as well as in colleges and universities.

DISMISSAL. See Honorable Dismissal.

Withdrawal, dismissal, suspension (usually used for temporary dis-

missal for disciplinary reasons), expulsion (usually used for permanent dismissal for reasons pertaining to conduct and character rather than scholarship) are terms which need consideration not only for denotation but for the delicate connotations involved.

DISSERTATION.

Usually used of the thesis presented by a candidate for the degree of Ph.D. including some account of research and presenting an original contribution to knowledge. See Thesis. Some institutions require publication of the dissertation, some publication of an abstract and some deposit of a typed copy.

DISTRIBUTION.

In the organization of a college curriculum, a student is required to satisfy certain specific requirements, to pursue certain courses in groups, the social science group, the modern language and literature group, the science group, etc., and also to concentrate his effort during his last two years in a single group or department. The effort to secure a wide acquaintance with the principal fields of knowledge is made through the distribution requirement.

DIVISION.

"Is used to indicate any organic portion of a university which is larger or more independent than a department." Report of Committee on University Nomenclature, Association of American Universities. Journal of Proceedings and Addresses of the Eleventh Conference, 1910, p. 91.

DORMITORY. Cf. English usage.

In England, an interior arrangement of sleeping quarters which provides for beds in a single large room rather than in cubicles.

In the United States, a residence hall for students consisting for the most part of single rooms, but occasionally providing suites of rooms to be occupied by one, two, or three students. Sometimes residence in a particular dormitory is limited to members of a particular group: Freshman Dormitories at Harvard, Graduate Hall and Divinity Hall at Chicago. The English dormitory, the arrangement of a number of beds in a single room, is known in the United States chiefly in fraternity houses.

ENDOWMENT.

"College endowment is a fund, the principal of which is invested and kept inviolate, and only the income used for the general support of the college, or for some specific object in connection with it." Trevor Arnett: College and University Finance, p. 24.

Reports of colleges frequently refer to productive endowment and permanent endowment. In recent years, since the action of accrediting associations in accepting the "equivalent of endowment" in the case of church colleges staffed by members of religious orders who receive no salaries and whose contribution of service is estimated on the

basis of salaries paid for like work in neighboring endowed institutions of approximately similar rank, and whose estimated contribution is then made the basis for computing at 5 per cent a non-existent capital fund, several institutions, without explaining this procedure, have reported these non-existent funds as "endowment." Probably this "living endowment," as it has been called, has led to a practice among some endowed colleges of calling annual gifts of alumni, if pledged or given for a series of years, "Living Endowment."

ENROLLMENT.

"Number of different pupils enrolled (or entered) on the school registers during any given year; or, in other words, the entire number of different pupils who have attended at any time during the year." National Education Association, 1892, p. 737.

In the annual statistical report are these students included in the total enrollment? Fully matriculated candidates for degrees; conditioned students; special students of the regular academic year; summer students; part-time students; students registered for less than a certain minimum; students in evening classes and Saturday morning classes; those in extension classes or short courses; of these, if included, only those registered in courses of college standard; students who file registration cards, even if they do not complete registration by payment of fees or attend classes, or take final examination; those who for any reason drop out after three days, a week, two weeks, six weeks, or any other period; those registered in two schools or colleges as in the college of liberal arts and the law school; doctors of philosophy pursuing investigations in library or laboratory or attending classes; students temporarily pursuing work in another college or university in the United States or abroad or in industry or any other field of study or research.

Great Britain, because of the influence of the committee which awards grants in aid on the basis of certain returns, is approximating uniformity in reporting enrollment. For instance, students enrolled for full-time courses extending over one or more academic years, but absent for a part of a session, are included as full-time students. Other arbitrary rulings make it possible to understand just what the statistical tables represent.

EQUIPMENT—apparatus, furniture.

"What distinction should be made between building equipment and equipment for the scientific departments using the building? Difficulty naturally arises at the point where the individual characteristics of each are least prominent. As a rule, 'building equipment' refers to furniture and permanent equipment which must be included in the building, whatever department may use it, and 'scientific equipment' means that apparatus and equipment which must be specially provided for the needs of the scientific departments." Trevor Arnett: *College and University Finance*, p. 19.

EXAMINER.

Officer of faculty charged with examining candidates for admission in accordance with regulations of faculty.

Sometimes responsible also for supervising examinations of students in courses.

EXTRA-CURRICULAR. EXTRA-CURRICULAR ACTIVITIES.

Refers to those enterprises which enlist the interest and voluntary energy of college students outside of requirements pertaining to course or other official responsibilities, usually through organizations to promote literary, dramatic, musical, athletic and other events.

FACULTY.

In a school or college of a university, permanent members of the teaching staff; of the rank of professor.

Members of the teaching staff including professors, associate professors, assistant professors, and instructors but not including assistants appointed for one year only.

All members of the teaching staff.

FELLOW.

The English usage is to be traced in "The President and Fellows of Harvard College" and in "Fellows of the American College of Surgeons." Usually in the United States a fellowship implies appointment for a single year, with a stipend and an obligation to pursue advanced study leading to the degree of Ph.D. or beyond that degree. There is a tendency at present to differentiate fellowships, graduate scholarships and graduate assistantships.

FIELD WORK.

In Schools of Engineering, Librarianship, and in departments of Geology, Geography, Sociology, etc.

"Term used in library school curricula to refer to extended practical or observation work in libraries usually outside the territory in which the school is located." Board of Education for Librarianship.

FISCAL YEAR.

"An examination into the treasurer's reports of one hundred institutions . . . shows that the fiscal year beginning with July 1 most frequently occurs; thirty-six out of the hundred count the fiscal year from July 1 to June 30." The Carnegie Endowment for the Improvement of Teaching. The Third Annual Report of the President and Treasurer, 1908, page 55.

FRATERNITY.

A social organization of students in several colleges with self-perpetuating membership, election in the national organization being conducted by the local college group called a chapter, usually owning or maintaining a residential club house, publishing a magazine and catalogue of members and maintaining a national office and assembling in a national convention.

In recent years on the analogy of the college fraternity, similar organizations have been formed in graduate and professional schools.

Certain fraternities, conspicuously Phi Beta Kappa, have ceased to be social only and have become "honor societies."

Women have formed societies like those of the men, usually called sororities, but sometimes named fraternities.

FRESHMAN WEEK.

A week of effort at orientation of new students in college; "telling freshman all that could be told him to help him become oriented intellectually and geographically at the university"; "learning what we could of the freshman to enable us to evaluate him more intelligently and successfully"; "providing sensible and natural opportunities for recreation." President C. C. Little, University of Michigan. *School and Society*, December 18, 1926, p. 765. For shorter periods President Little suggests "orientation," "first days," "opening," "registration," "initiation."

GRADE.

In elementary education, "the body or group of pupils having the same degree of advancement, pursuing the same studies, etc." National Education Association, 1892, p. 743. Cf. English, Standard. In American college, cf. Class.

In higher education, an evaluation of a student's work in a course including consideration of attendance and achievement, the latter usually based on a record of daily work in recitation or laboratory, on prepared papers and on examinations written or oral.

FULL-TIME AND PART-TIME PROFESSORS.

A full-time professor is one who devotes his full working day to teaching; not less than two lectures each day with conferences, correction of papers, preparation, committee meetings, etc.

A part-time professor is one who, engaged in professional practice outside of the university, gives part of his time to lecturing in an institution (e.g., School of Medicine or School of Law).

GRADUATE SCHOOL.

A division of a university including instruction and opportunity for research in arts, literature and science for admission to which a baccalaureate degree or equivalent from an approved college is required. Graduate professional schools are designated Law School, Divinity School, etc. (See School.)

The North Central Association of Schools and Colleges, at its Annual Meeting, 1926, requested the Association of American Universities and the American Council on Education to set up criteria whereby graduate schools may be evaluated.

GRADUATE COURSES.

Specifications of a graduate course have yet to be written. In most

of the circulars of information, they are described as those listed on p. 1529 (l) or those numbered from 50 to 150 (l)

GROUP.

"Restricted to a combination of related subjects." Report of Committee on University Nomenclature. Association of American Universities. Journal of Proceedings and Addresses of the Eleventh Annual Conference, 1910, p. 91.

In a discussion of the foregoing recommendation, it was declared that Columbia suggested combination of courses rather than of subjects.

"The term 'group' is restricted to a combination of subjects related in content or method; as, for instance, the group of classical languages, of the biological sciences, etc." National Conference Committee on Standards of Colleges and Secondary Schools. 11th Conference, New York, March 1, 1918. In *School and Society*, 7:480, April 20, 1918.

It is to be noted that in British usage these four groups are recognized: Agriculture, Forestry, Horticulture, Dairying.
Medicine, Dentistry.

Arts, Theology, Law, Music, Commerce, Education.

Technology: Engineering, Architecture.

HIGHER EDUCATION.

"This is supposed to take the fourth epoch of four years in a complete course of education, secondary taking the third four years, and elementary education the first eight years. By topics and methods, the higher education is distinguished by taking mathematics in those branches which succeed plane geometry and elementary algebra; Latin and Greek writers that require more maturity of reflection to master, such as Horace, Livy, Tacitus, Juvenal, Cicero's moral essays, Homer, Demosthenes, Plato, Aeschylus, Sophocles, Euripides, Aristotle; physics treated by mathematics; rhetoric; mental philosophy; the philosophy of history. In general, the studies of higher education are conducted on a comparative method—with the purpose of treating each theme in the light of all branches of knowledge. A *higher institution* of learning is one whose ultimate object is to give a higher education, and which therefore may or may not have a preparatory department in which instruction is given in secondary or even elementary branches." National Education Association, 1892, p. 739.

HONORABLE DISMISSAL.

"That the term 'Honorable Dismissal' should be used to refer to conduct and character only, and that honorable dismissal should never be given unless the student's standing as to conduct and character is such as to entitle him to continuance in the institution granting the dismissal. Furthermore, there should in every instance be given, in the statement of honorable dismissal, full mention of any probation, suspension, or other temporary restriction imposed for bad conduct, the period of which restriction is not over when the papers of dismissal

are issued." National Conference Committee on Standard of Colleges and Secondary Schools. Minutes, January 28, 1911, and February 19, 1913.

HONORS COURSE.

A system of substituting, for a definitely organized curriculum of the third and fourth college years, one with complete or partial release from course requirements including class attendance and course examinations and with emphasis on a limited field of study supervised informally and intimately by a professor, and tested by a comprehensive examination and other means, especially at the end of the normal period of preparation for the college degree.

HONOR SOCIETY.

An organization of national scope, election to which in individual institutions is based chiefly on a record of achievement in scholarship as indicated by high grades received in courses or by success in original investigation under supervision, standards for which are published by the local chapter of the organization in accordance with the general aims and practices of the national society: Phi Beta Kappa, Sigma Xi.

Honor societies of national scope in particular departments and schools have become numerous in recent years: The Order of the Coif (Law), Delta Sigma Rho (Debating), etc.

Honor societies among college students include also self-perpetuating class societies of limited membership, election to which may be based on personal qualifications as determined by present members of the societies.

Hour.

"That the term 'Hour' be restricted to use in measuring college work, and that the term 'exercise' be used to denote a recitation, lecture, or laboratory period in a college." National Conference Committee on Standards of Colleges and Secondary Schools. Minutes, January 28, 1911, and February 19, 1913.

Clock hour sixty minutes.

Various modifications of the clock hour from forty to sixty minutes.

Semester hour, a time unit representing one "hour" a week during a semester.

Term hour: one "hour" a week for a term.

Year hour: one "hour" a week for an academic year.

See Period.

INSTITUTE.

Originally a general term like institution, institute has come to have certain limited meanings.

In education, associated with science and technology. Mechanics' Institute, Polytechnic Institute, Massachusetts Institute of Technology, Armour Institute, Hampton Institute, Tuskegee Institute, Carnegie Institute.

Teachers' Institutes.

"Term is used in New York State to refer to one day gatherings for instruction and conference of librarians in various regions of the state." Board of Education for Librarianship.

More recently, foundations primarily for research independent of or associated with a university: Rockefeller Institute; Institute of Economics; Institute of Government Research; Institute of International Education; Mellon Institute (University of Pittsburgh); Wistar Institute (University of Pennsylvania); Oriental Institute and Sprague Institute (University of Chicago).

INTRAMURAL.

Applied usually in reference to athletic and other activities of college students; pertaining to competitions and other relations within the membership of a college; contrast intercollegiate.

IRREGULAR STUDENTS.

"Those whose entrance qualifications would not admit them to candidacy for a degree."

JUNIOR COLLEGE.

"A junior college is a college which requires for admission four full years of high school education or its equivalent, and gives only two years of college work, centering all of its energies and means on doing the best possible work in these two lower classes." Dr. P. P. Claxton.

"The Junior College is an institution of higher education which gives two years of work equivalent in prerequisites, scope, and thoroughness to the work done in the first two years of a college as defined elsewhere by the American Council on Education." American Council on Education. *Report on Accrediting Colleges, 1922.*

JUNIOR HIGH SCHOOL.

"An organization of grades 7 and 8 or 7 to 9 to provide by various means for individual differences, especially by an earlier introduction of prevocational work and of subjects usually taught in the high school." Thomas H. Briggs: Secondary education. In U. S. Bureau of Education. *Annual Report, 1914, p. 137.*

LABORATORY.

Originally used in connection with physics, chemistry and biology, the term has been extended as the laboratory or project or Dalton method has been used in other subjects; so that occasionally there is reference to an accounting laboratory, a business laboratory, etc.

"Practise work under direction"; "supervised preparation in cataloguing and classification courses." Board of Education for Librarianship.

LABORATORY SCIENCE.

A term used in stating admission and degree requirements in order to assure laboratory training, as in physics, chemistry or biology. Geography, for instance, is sometimes allowed and sometimes is not.

LECTURE.

Strictly a single exercise of a course; characterized by a lecture by the instructor.

Any class exercise conducted as lecture, discussion, recitation, or otherwise.

LENGTH OF SCHOOL YEAR.

"The number of days, weeks, or months the schools were in actual session during the school year. The expressions 'length of schools,' 'duration of schools,' 'length of school term,' etc., are also used. *The average length of the school year* is the average of a group of schools in which the number of days of session varies. As in most foreign governmental school systems the number of days is nearly uniform, this latter term has little application outside the United States." National Education Association, 1892, p. 737.

English: Number of times school has kept. This must be divided by two to get the number of days.

LIBRARY.

"A college should have a live, well-distributed, professionally administered library of at least 8,000 volumes, exclusive of public documents, bearing specifically upon the subjects taught and with a definite annual appropriation for the purchase of new books." American Council on Education. Report on Accrediting Colleges, 1922.

A definition of a college library must include the number of volumes (not titles) accessioned or unaccessioned, bound and unbound; pamphlets; government documents in the general and departmental collections; some reference to the selection of books in relation to courses offered; the records of the use of the books; the professional administration of the library.

LIVING EXPENSES.

College catalogues in estimating this include various items: room rent but not always the furnishing of the room; board during session but not during vacations or holidays; occasionally laundry, pocket money, travel expense, etc.

LIMITED CREDIT COURSE.

In a college, usually an elementary course appropriate to the first year; for which full credit is given if taken during the first or second year, but for which only half credit is given in the third year and no credit in the fourth year; a device for assuring the inclusion of "advanced courses" in the third and fourth years of a student's curriculum.

LOWER DIVISION.

A part of the college organization consisting of the first and second college years; equivalent to Junior College.

MAJOR.

In college degree requirements, a frequent method of organizing a

curriculum is to require the student to choose a department in which to pursue a considerable proportion of his work in third and fourth years—frequently twenty out of one hundred and twenty semester hours. A further concentration requirement usually associated with this is the minor, a requirement that a considerable number of courses, commonly twelve out of one hundred and twenty semester hours, be pursued in a department related to the major department. The total amount of the major and minors varies from 18 to 84 semester hours.

MARKS.

Qualitative estimates of the pupils' work in courses; constituting the official elementary or secondary school record. There are various numerical and alphabetical and other systems.

MATRICULANT.

A candidate for admission to a college.

One who has been admitted to a college or university as a candidate for a degree.

Any person admitted to an institution of higher education.

MATRICULATE.

One who has satisfied the requirements for admission to candidacy for a degree in a college or university.

Any person admitted to a college or university including special students.

MEN, WOMEN, BOYS, GIRLS.

Certain colleges in their catalogues and reports use the term "boys" and "girls"; others use "men" and "women."

MEDICAL COLLEGE.

"An institution to be ranked as a medical college must have at least six professors, giving their entire time to medical work, a graded course of four full years of college grade in medicine, and must require for admission not less than the usual four years of academic or high school preparation, or its equivalent, in addition to the pre-academic or grammar-school studies." Revised Ordinances of the State of New York. Adapted by the Carnegie Foundation.

MENTAL HYGIENE.

A phase of personnel administration in colleges closely related to the health program and the advisory functions of deans, advisers, chaplains and vocational guidance experts and concerned with the establishment and maintenance of wholesome attitudes of mind, usually under the direction of a trained psychologist, psychiatrist or medical officer. One college conducts such work in a course entitled "College Relationships."

MUNICIPAL UNIVERSITY.

University maintained in whole or part by appropriations of the municipality in which situated. University of Cincinnati, College of

the City of New York, Municipal University of Akron, University of Detroit.

NORMAL SCHOOL. See Teachers' College.

PERIOD.

Length of recitation, lecture, conference, or other instructional unit commonly an "hour." Hour definitely prescribed as 50, 55 or 60 minutes; frequently 60 minutes, but with ten minutes grace for passing from class to class, so that the period in practice begins ten minutes after the hour announced: the "academic ten minutes."

PERSONNEL ADMINISTRATION.

PHYSICAL EDUCATION, Physical Training, Physical Culture, Physical Exercise, Calisthenics, Gymnastics, Health Program.

In settling upon one of several terms for the same thing, it will be well to keep the point of view of the National Student Health Association.

Fairness demands mention of the various smallpox and typhoid inoculations and examination requirements for admission, the type of special work assigned on examination, swimming requirement, if any, etc.

PHYSICAL PLANT.

"The physical plant consists of the land used for campus with its improvements, and the buildings, together with their furniture and equipment, books, scientific apparatus, machinery and tools." Trevor Arnett, *College and University Finance*, p. 54.

POINT

Grade point, honor point, quality point. A term used in some systems of evaluating the work of students.

Point system used among undergraduates in some colleges in reference to a scheme for controlling participation in "student activities."

PRELIMINARY REGISTRATION; FINAL REGISTRATION.

Figures gathered for administrative use before complete returns are possible; statistics prepared at the end of a semester or other time when all data are available; a differentiation suggested to the Association of American Universities by F. P. Keppel.

PRE-VOCATIONAL EDUCATION.

"Includes any form of education designed to enable a youth to discover for which one of several possible vocations he is best fitted by natural ability and disposition, the program or instruction and practice for this purpose being based mainly upon actual participation on the part of the learner in a variety of typical practical experiences derived from the occupations involved." Committee on Vocational Education N. E. A. Vocational Secondary Education. U. S. Bureau of Education Bulletin No. 21, 1916.

"A prevocational course is an attempt to modify the work commonly

found in grades seven and eight, or possibly six, seven, and eight, in order to motivate that work for those pupils who have been seriously retarded and are hopelessly behind grade because they need the stimulation which comes from concrete doing, or because of pronounced irregularity in attendance resulting from peculiar home conditions or from illness." F. M. Leavitt: *Prevocational Education*, p. 4.

PRE-LEGAL CURRICULUM.

Courses advised or required for college students in their first, second and third years as preparation for the professional curriculum of the law school.

PRE-MEDICAL CURRICULUM.

Courses advised or required for college students during first and second years as preparation for the medical curriculum.

PRESIDENT.

Chief executive officer of a college or university. Appointed by Board of Trustees, sometimes with the advice of the faculty, sometimes as in the case of a denominational college, with the advice or consent of an ecclesiastical authority, usually for life or subject to such rules for retirement as are in force for members of the faculty.

With varying duties, but usually including: administration of policies of Board of Trustees; preparation of the annual budget and presentation of same to Board of Trustees, or, in the case of a State University, to the legislature.

Control of actual expenditures as chairman of committee on expenditures or similar committee of the Board of Trustees with power to approve requisitions for expenditure within the budget.

Leadership in formulation of educational policy by the faculty.

Administration of policies of faculty.

Agent of trustees in relation to faculty and students.

Agent of faculty and students in relation to trustees.

PROBATION.

A status controlled by dean or the faculty and representing official warning because of inadequate preparation or success in courses, or character or conduct; after a given period students are removed from probation, dismissed automatically or by special action, or by special action continued on probation.

PROFESSOR.

Professor, Associate Professor, Assistant Professor, Instructor, Assistant.

PURE SCIENCE. Cf. Applied Science.

PROGRAM OF STUDIES.

"Which includes all of the studies offered in a given school." Committee of National Education Association on College Entrance Requirements, 1899, p. 42.

QUARTER SYSTEM.

A division of the academic year into four quarters, Summer, Autumn, Winter and Spring, of approximately twelve weeks each.

REGISTRAR.

An officer of the faculty charged with responsibility of executing regulations concerning registration in courses, recording attendance, achievement in courses, personnel information.

REGULAR STUDENTS.

"All students who have met the full requirements for admission, whether they pursue courses leading to degrees or take special work." The Carnegie Foundation for the Improvement of Teaching. Fourth Annual Report of the President and of the Treasurer, 1909, p. 144.

RESEARCH. Current use in business offices and elementary schools suggests the need for a definition.

RESIDENCE.

Residence requirement may pertain to the length of time a student must be registered in courses in an institution in order to qualify for the degree of that institution in addition to such residence or other qualifications he may present for advanced standing. Correspondence study is not residence study. In some institutions research in an institute, government bureau or industry, if supervised by a professor of the institution, is accounted residence work.

Residence requirements may pertain to place of lodging for students; for example, all women may be required to live in a college dormitory.

Residence requirement may pertain also to fiscal arrangements in a state university, residents of a state sometimes being charged no fees or fees less than those exacted of students from outside of the state.

SABBATICAL YEAR.**SCHOLARSHIP.**

An honor award granted for one or more years on a basis of scholarship exhibited in competitive examinations or in achievement in courses, usually providing for all or part of the tuition charge, and sometimes an additional stipend.

Any form of aid to pay tuition and other college fees sometimes taking the form of "deferred tuition," practically a loan to the amount of the fees and bearing interest from the date of receiving the degree, and sometimes taking the form of a "service scholarship," practically a credit established by rendering the institution service in library, laboratory or office.

SCHOOL.

Not infrequently used to indicate one of the largest subdivisions in the university, as, for instance, at Harvard, Yale and Columbia, divinity and medical schools, and at Pennsylvania, the school of arts.

"By a number of institutions the word 'school' is used for the group.

ing of subjects to a definite end in one or more colleges; for instance, in the college of engineering, there may be a school of civil engineering; in the college of liberal arts, a school of music; and in the various colleges a graduate school.

"In the south, the different subjects of instruction; thus we have a school of biology, a school of history, a school of German, a school of French, etc."

"Restricted to a part of the university, the standard of admission to which is not less than the equivalent of two years' work in the college, and which offers instruction of not less than two years duration leading to a technical or professional degree."

Proceedings of the Tenth Annual Conference of the Association of American Universities, Report of the Special Committee on University Nomenclature, p. 67.

"The term 'school,' as applied to part of a university, is restricted to that part, the standard of admission to which is not less than the equivalent of two years' work in the college, and which offers instruction of not less than two years' duration, leading to a technical or professional degree."

National Conference Committee on Standards of Colleges and Secondary Schools. 11th Conference, New York, March 1, 1918. In *School and Society*, 7:480, April 20, 1918.

SEMESTER HOUR.

"A semester hour is one hour a week of lecture or class instruction or its credit equivalent of laboratory instruction for a semester." Definition of U. S. Bureau of Education (Higher education division).

SEMINAR.

"A seminary, according to the German idea, is a small group of advanced students carrying on investigations of an original nature under the general guidance of their instructor." Charles K. Adams.

"Used by some library schools to apply to a course in the curriculum consisting of a series of studies with class discussion and report of subjects or problems, usually unrelated, and sometimes of an elementary nature." Board of Education for Librarianship.

In recent years, there has been some evidence of a tendency to use the term somewhat loosely as descriptive of the method of guiding college students pursuing honors. Pro-seminars are also described in college as well as in university catalogues. Some things so described suggest the need for introducing the term pseudo-seminar!

SENIOR COLLEGE.

Of a college that part of the curriculum included in the third and fourth college years (Junior and Senior years), sometimes called the Upper Division, characterized by concentration on a subject or group

of subjects studied in accordance with university rather than secondary ideals.

SENIOR HIGH SCHOOL.

SESSION.

"A sitting of a school, or assembly of the pupils for recitations, exercises, and studies, continuing from the time the school is called to order until the pupils are dismissed beyond the teachers' jurisdiction. There are generally either one or two sessions each day." National Education Association, 1892, p. 742.

English: Meeting of the school.

Length of time between first meeting and final meeting of a course (term, semester, quarter, year).

SORORITY. See Fraternity.

SPECIAL STUDENT.

" . . . All those over twenty-one years of age who are not members of one of the four college classes. Such students may or may not have completed the entrance requirements. They are for one reason or another irregular students beyond high school age, admitted to a special course." The Carnegie Foundation for the Advancement of Teaching. Fourth Annual Report of the President and of the Treasurer, 1909, p. 143.

" . . . All students over twenty-one years of age who are not candidates for a degree and who have not met the requirements for admission. *Ibid.*, p. 144.

STATEMENT OF RECORD.

"That the term 'Statement of Record' should be used to refer to the recorded results of a student's work in the classroom, and that this statement should in every instance contain all the important facts pertaining to the student's admission, classification and scholarship. In particular, no partial or incomplete classroom record (for example, with failures omitted) should ever be given without clear evidence that it is partial or incomplete; if the student's scholarship has been such as to prevent his continuance in the institution issuing the statement of record or to render him subject to any probation, suspension, or other temporary restriction, the period of which is not closed at the date of the record, a plain statement of any and all such facts should be included; and such information should be given as will make clear the system of grades employed, the number of exercises per week devoted to each course, etc." National Conference Committee on Standards of Colleges and Secondary Schools. Minutes, January 28, 1911, and February 19, 1913.

SUMMER SCHOOL.—SUMMER SESSION.

TEACHERS' COLLEGE.

"The normal schools or teachers' colleges are institutions of higher

education with two-year, three-year, or four-year curricula designed to afford such general and technical education as will fit students to teach in elementary and secondary schools." American Council on Education. Report on Teacher Training Institutions, 1924. This report includes criteria for such institutions and for colleges and universities desiring recognition as institutions for the technical training of teachers.

TERM.

The smallest time unit of a course: one-half of a semester, quarter, or year. Sometimes used as equivalent to a quarter as in the three-term system.

THESIS.

A paper presented by a candidate for a degree as part of the evidence of his qualifications for the degree. A Doctor's Thesis (see Dissertation) implies research and an original contribution to knowledge. A Master's Thesis may be this or an essay involving some reclassification of information. A Bachelor's Thesis is an essay on a subject in the field of the student's major.

UNCLASSIFIED CANDIDATES FOR A DEGREE.

"Those students who have completed the regular entrance requirements and are really of the same grade as the so-called regular students, with whom they should be classified." F. P. Keppel: Uniformity of University Statistics of Enrollment and Expenditure. The Association of American Universities. Journal of Proceedings and Addresses of the Fourth Annual Conference, 1902.

UNDERGRADUATE.

"At three institutions this means student in an academic or non-professional school and not holding a bachelor's degree; at three others it means a candidate for a first degree in any department; at six it includes students in engineering, at three it does not." F. P. Keppel: Uniformity of University Statistics of Enrollment and Expenditure. The Association of American Universities. Journal of Proceedings and Addresses of the Fourth Annual Conference, 1902.

UNION.

A club house or organization of students for social and other purposes, of which all men students or all women students are members as such, with or without payment of a required fee, or of which all students may become members on election and voluntary payment of membership fees: Michigan Union, Harvard Union, Reynolds Club (Chicago), Houston Hall (Pennsylvania).

UNIT.

"A unit represents a year's study in any subject in a secondary school, constituting approximately a quarter of a full year's work."

"This statement is designed to afford a standard of measurement for the work done in secondary schools. It takes the four-year high

school courses as a basis and assumes that the length of the school year is from 36 to 40 weeks, that a period is from 40 to 60 minutes in length, and that the study is pursued for four or five periods weekly; but, under ordinary circumstances, a satisfactory year's work in any subject cannot be accomplished in less than 120 sixty-minute hours or their equivalent. Schools organized on a different basis can nevertheless estimate their work in terms of this unit." Carnegie Foundation 4th annual report.

"That the term 'unit' be used only as a measure of work done in secondary schools. A unit represents a year's study in any subject in a secondary school, constituting approximately a quarter of a full year's work. A four-years secondary school curriculum should be regarded as representing not more than sixteen units of work." National Conference Committee on Standards of Colleges and Secondary Schools, Minutes, January 28, 1911, and February 19, 1913.

"That 'unit' be used as defined by this committee, the Carnegie Foundation, and the College Entrance Examination Board, and that 'hour' be used preferably in the sense year-hour." National Conference Committee on Standards of Colleges and Secondary Schools. Minutes, January 28, 1911, and February 19, 1913.

UNIVERSITY.

"An institution of higher education, having as its nucleus a college in which the so-called liberal arts are taught in a course of three or four years for the degree A.B., and in addition one or more departments for the learned professions, medicine, law, or divinity—or it may be for advanced or post-graduate work, along any lines of learning or investigation. In England the university unites several colleges." National Education Association, 1892, p. 742.

UPPER DIVISION.

See Senior College.

URBAN UNIVERSITY.

University located in an urban community. Not necessarily a municipal university. See Association of Urban Universities for list of members and communities.

VOCATIONAL GUIDANCE.

"Includes all systematic efforts, under private or public control, and excluding the traditional activities of the home, the conscious and chief purpose of which is to secure the most economical and effective adjustment of young people to the economic employments which they can most advantageously follow." Committee on Vocational Education, N. E. A. Vocational Secondary Education. U. S. Bureau of Education, Bulletin No. 21, 1916.

DAVID A. ROBERTSON.

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General Examinations and Tutors in Harvard College¹

HISTORY OF THE SYSTEM

THE use of examinations as a measure of attainment never ceased at Harvard, and, in fact, with the more rigorous training introduced by President Eliot into the Schools of Law and Medicine, the practice became general throughout the University. But with the growth of the elective system it came to have a special function. In the College that system began by permitting the substitution of an elective for some required course; at first in the senior year, then in the junior. The process was gradually carried farther and farther—in each case substituting any elective for a course previously required—until it reached the point that nothing was required except a course in English composition and one or two in modern languages if those subjects had not been included in the examinations for admission. Since the choice of electives was otherwise wholly free, it came about that the qualification for a degree was English A and any sixteen other courses, completion of each being proved by one or more examinations on what had been taught in the course. The examination paper had, therefore, to be prepared by the instructor who gave the course, for he alone knew the ground he had covered; and thus the degree was obtained by an accumulation of credits in inde-

¹As a follow-up of the report by L. B. Hopkins on "Personnel Procedure in Education," published as Supplement to the Educational Record for October, 1926, the Committee on Personnel Methods invited each of the institutions involved to write a description of some one phase of personnel work in which it is doing something significant. This number of the EDUCATIONAL RECORD contains six of the articles written in response to this request and describes special personnel activities at Harvard, Yale, Stanford, Dartmouth, Minnesota, and Northwestern respectively. Other articles of this series will follow later.—EDITOR.

pendent courses. A similar process went on in the examinations for admission. At first these were rigidly fixed and were all taken at one time; then options were allowed, and finally the candidate was permitted to offer as few at a time as he pleased; so that admission, like graduation, was attained by a sum of credits which might be earned disconnectedly and at intervals.

The first departure from this system was made in pursuance of the report of a committee appointed in 1908 to "consider how tests for rank in college may be made a more generally recognized measure of intellectual power." On June 1, 1909, it recommended that rules for the choice of electives should be prepared, "based upon the principle that a student must take courses enough in some one field to lead to a degree with distinction, and must distribute the rest of his courses so as to leave none of the chief branches of learning wholly untouched." The report was adopted by the Faculty, and a standing Committee on the Choice of Electives worked out in detail a plan, which was enacted by the Faculty in December of that year. This change, like the provision for majors in other colleges, secured to the student something approaching a systematic knowledge of some subject, and laid the foundation for further progress.

A more direct breach in the practice of measuring by credits in courses was taken in the spring of 1910. All students who did not pass examinations for admission in both French and German had been required to elect, among their sixteen courses, one in the language that they had not so passed, or in each language if they had passed neither at entrance. Yet when they came to courses in which the use of French books, for example, was needed, a large part of the class proved unable to read them. The requirement in modern languages was therefore changed from that of taking a course, to that of being able to read ordinary prose, to be proved by a special examination in so doing. This was a distinct step in substituting a direct test of capacity for a credit in the process of instruction.

Another advance in the same general direction was made

in January, 1911, when an alternative method of admission was adopted, still commonly known here as the "new plan." The motive was a desire to open a door from schools in other parts of the country that do not arrange their studies as a preparation for college entrance examinations; but the result was a new principle of measuring fitness for college work. Instead of examining on all the subjects in the four years of secondary school work, and doing it piecemeal, the fact that an appropriate curriculum had been pursued was accepted on the statement of the head-master, and the examination was confined to four typical subjects, which must be passed well, and at the same time. The object was to determine, not what a youth had done at sundry times in the past, but what kind of capacity he had obtained and what he had become as the result of his schooling. It was an attempt to get an impression of the individual as he stands, rather than of the instruction he has been through.

In explaining the principle of concentration in his annual report for 1908-09, the president remarked: "It may be hoped that, under the new rules for the choice of electives, some form of general examination at the end of the college life on the principal field of study will be more commonly required." This hope was fulfilled first, not in the college, but in the medical school. Education for medicine is peculiarly difficult because it requires the study of many subjects whose interrelation, and whose connection with practice, is far from self-evident. Hitherto, as was usual in all American education at that time, the degree had been conferred upon the completion of a fixed number of courses, but complaint was made that the system was inelastic, and lacking in stimulation. It was said that the student might graduate without retaining sufficient knowledge of the subjects he had studied, without coordinating them, and, indeed, without sufficient inducement to do so. In the spring of 1910 a committee was therefore appointed which examined the system prevailing in American medical schools of granting the degree upon an accumulation of credits in courses, and the European system of two general examina-

tions, the earlier upon the general scientific or laboratory subjects and the final one upon the clinical branches. The committee recommended the adoption of the latter system, and after its provisional approval by the Faculty of Medicine in March of the following year, another committee, mainly of different members, worked out a plan which was adopted by that Faculty in October, 1911.

At first it did not work well, for it was treated too much as a short review of the courses, and produced the meagre results of an examination of that kind. Moreover, the European plan of two distinct examinations, first upon laboratory and later upon clinical subjects, proved to be defective, because one of the main objects of such an examination should be to induce a correlation in the student's mind between these two parts of his professional knowledge, that is, between the basic sciences and the art that depends upon them. Not until after the war was the true significance of the principle appreciated. It was then seen that if the examination was to be general the questions must be general also, demanding an application of some portion of the laboratory sciences to the facts of disease. Of late years this has been done by a single general examination, partly written and partly oral, that closes the four years of study in the school; and it has become a real standard of achievement, fixing the attention of the students on the true aim of their work, and affecting to no small extent the teaching of the courses throughout. Curiously enough, while both the new plan of admission to college and the system of a general examination and tutors for undergraduates have been very widely adopted by colleges with problems akin to ours, the final examination in medicine, although for some years highly successful, has not yet been followed by any other medical school.

Shortly after its adoption in the medical school the idea of a general examination invaded departments at Cambridge. In the academic year 1911-12 it was adopted in the Divinity School for the degrees of Bachelor and Master of Theology; and in this case it seems to have worked well from the start.

Meanwhile the division of History, Government and Economics had been considering the matter, and after a year of careful study formulated a plan which was sanctioned by the Faculty of Arts and Sciences in the winter of 1912-13. The examination was to be conducted by the division and in fact by a committee of three of its members appointed by the president, who were to be relieved of one-half of their work of instruction. It was to consist of both written and oral tests, was to be required of all college students concentrating in that division, in addition to their courses, and was to go into effect with the class entering the following autumn. Authority was also given to supplement by tutorial assistance the instruction given in the courses. Thus the complete system of a general examination and tutors was set up for all undergraduates in one division, and the one which at the time had the largest number of concentrators.

The plan was put into effect without serious obstacles. The number of students concentrating in these subjects did, indeed, diminish, the weaker or more timid seeking departments where no such examination barred the way; but that was no harm, and proved to be in large part a temporary effect. The preparing of examination questions, which had been supposed very difficult, was exceedingly well done by an able committee. Yet the plan was not at once wholly successful. Tutorial work was new, and men equipped for it were not to be found. They had to learn the art by their own experience, and by what they derived from an exchange of tutors for a year with Oxford and Cambridge. In fact, after a few years of trial the plan seemed in danger of breaking down. The benefits were not at once evident, some of those formerly in favor of it became skeptical, while opponents were confirmed in their opinions. Until we entered the World War the only other field of concentration which had adopted a general examination of all students for graduation was that of History and Literature, although something of the kind had long been in common use in the case of candidates for distinction or honors.

The crisis came at the close of the war, when the changes

made for military purposes in all instruction had left matters in a somewhat fluid state. A committee of the faculty was appointed to consider what, if any, extension of the principle could profitably be made in other fields. There was a feeling that such a system ought not to be maintained in one class of subjects alone; that it should either be abolished or extended. After a study of the question in its various phases the committee reported, and in April, 1919, the faculty voted, that general examinations should "be established for all students concentrating in divisions or under committees which signify their willingness to try such examinations," and that they "be employed for the members of the present freshman class." Thereupon all the divisions under the faculty, except those dealing with mathematics and the natural sciences, decided to make the experiment. Some of them did so reluctantly, with misgiving, and under a condition that they should not be obliged to employ tutors. The plan of allowing each department or division to decide upon its own policy in so highly novel a matter was certainly wise, for it stimulated experimentation and made for permanent conviction. The system as a whole could be trusted to demonstrate its own merit, and did so. The divisions that set up a general examination without tutors found their students complaining that they were required to do a difficult thing without guidance, and the proportion of men who graduated with distinction was markedly lower than in the departments which had both general examination and tutors. By the academic year 1924-25, therefore, the students in all the divisions with a general examination had the benefit of tutoring.

Since that time the progress of the system has been gradual but continuous. Two years ago the department of mathematics decided to adopt it, and a year later biology and biological chemistry followed its example; leaving chemistry and physics as the only departments with a large number of concentrators that still retain the older methods, and their work is done so much in laboratories that their position is peculiar. The only change in the system has

come from a demand by the students themselves. We have not desired to abandon teaching or examination in courses by copying the practice at Oxford and Cambridge of leaving instruction wholly to the tutor, save for such attendance at series of lectures as he may direct. That seems ill-adapted to our habits, and involves a loss of the valuable elements in course instruction. Nor on the part of the undergraduates has there been complaint of the burden of preparing for the general, or as they call them "divisional," examinations in addition to the work in courses, except in the case of candidates for distinction. These men are required to prepare theses that take much time, and for them a lightening of the course work has been asked. The faculty, therefore, decided to permit, for such of these candidates as are recommended by the department and the dean, a reduction of two courses in all, one of which may be in the junior, or both in the senior year. The privilege has been granted sparingly, solely for the purpose of freeing time to be used for personal study and writing under the guidance of the tutor.

OPERATION OF THE SYSTEM

THE GENERAL EXAMINATION

Not many years ago examinations were anathema over a large part of the country. Some teachers felt that they knew the progress of their pupils, and did not see the need of subjecting them to tests. An examination was often regarded as a reflection upon the pupil, and, if set by a stranger, upon the teacher also. It implied a doubt whether the instruction had given all that it purported to impart; it suggested a suspicion that taking a course diligently did not mean learning the subject taught. For pupils whose work had not been satisfactory it might serve as a discipline, but for the good scholars it was almost an indignity. It was like indicting an honorable man, and making him prove his innocence. Moreover, it distracted the attention of both teacher and pupil from the real object of education, turning it to preparation for an artificial performance, making the teacher a crammer and the pupil a learner of tricks.

This conception of examinations has not been disproved, but it is being outgrown. Numerous conditions that might fill a treatise have brought a demand for the measurement of young people, for their classification in groups according to their natural capacity, their attainments, and their prospects. These have given rise to various kinds of tests, until educational thought and experiment have become deeply concerned with the subject of examinations. We hear much of intelligence tests based upon native ability, of aptitude tests, and of the new kind of examinations, where a large number of questions are given, to be marked rapidly Yes or No. These last, it is claimed, are more searching, more accurate, and more comparable than the older form of curricular questions in common use. Whether they will prove to be better or not for their purpose will be watched with interest, for it is highly important. But the excellence of any examination depends upon the degree in which it fulfills the object for which it is designed; and the intent of a general examination upon the main subject of a student's work in college is to ascertain not so much the amount of his knowledge as the use he can make of it; to measure his grasp, his power of thought, the extent to which his studies have moulded the fabric of his mind; in short, how far he has in that field become an educated man.

The aim of the system adopted here being the mastery of some subject as a whole, to be acquired so far as possible by the student's own work, a general final examination is needed to measure his attainment and still more to set a standard for achievement. This is the essential element, the foundation of the entire system on which all the rest is based; but in fact its importance is sometimes overlooked, because the tutoring, the frequent contacts with the students which it involves, and the personal influence of the tutors themselves, attract more attention. Yet it is the examination that marks out the goal for both tutors and students. Without it the system, except for a few undergraduates of exceptional scholarly tastes, would be like a football game without goal posts, or would degenerate into little more than

tutoring in courses and lose its real significance. A general examination that was easy or superficial would hamper the tutors in doing their best work; one that was eccentric or unfair would discourage both them and their pupils; one that required only a memory of facts would make it hard for both to devote energy to the deeper relations of the subjects studied. The nature of the examination, therefore, determines the character and effectiveness of the whole system, and it is both the essential and the most difficult part thereof. The object is to enable the candidates to display their command of the subject and cause them to expose their ignorance, and this in the case of those who have much, or only a moderate amount, of either. To prepare such an examination is an exceedingly difficult task, requiring much time and labor, wherefore it is important that in the departments with a large number of students the examiners should be relieved from a part of their other work; and in the division that has had the longest experience with the system here, a single examiner in each of the three subjects comprised is excused from one half of his teaching.

Both written and oral examinations are used by almost all the examining committees, each being at liberty to apply them in accord with its own experience of their value. In fact the practice has varied, but the present tendency is to limit the oral to candidates for distinction and to students who on the written papers do not clearly earn a degree, it being thought a waste of time to give an oral examination in cases where it will have no effect upon the result. The number of written papers and the length of the oral vary. The division with the longest experience has three written examinations of three hours each, and others which have less are likely to find that an increase of their papers will improve the value of their tests. In the subjects taken by the largest number of students, history, government and economics, ancient and modern languages, and history and literature, there are papers on both general and special fields. In history, government, or economics, for example, every candidate for a degree must take an examination of a general

character in the two subjects in which his principal work does not lie, a second examination covering in more detail the one in which it does lie, and a third, more searching, on his special field therein. In the literary subjects every man, before trying the paper on his own field, must take an examination on the Bible and Shakespeare, and another on two modern authors if his field is classics, or on two ancient ones if his field is modern literature; the moderns being allowed to read the classic authors in translations, the classical students having the same privilege for some modern books in the less familiar languages. Candidates for distinction are usually required also to write theses, on which much labor is often expended. These are, in fact, most important in determining the grade of honors awarded. They may reach a high grade of excellence, and although far less elaborate than theses for the doctorate of philosophy, they are sometimes quite equal in quality.

The committee that prepares the examination must consider many things. It must maintain satisfactory relations with the instructors in courses and with the tutors. While, on the one hand, it must use its own judgment on the ground to be covered and the nature of the questions to be asked, it cannot, on the other hand, disregard entirely the content of the courses. They are part of the instruction offered by the faculty and should be regarded as within the field included by the examination. This is true also of the work of the tutors, in the sense that they must be aware of the scope of the examination and the kind of question that will be set. The committee, therefore, cannot properly widen the field without warning to them. Students have a right to rely on them for advice about their reading and it would be demoralizing to conduct examinations so that tutors cannot give it. Yet the committee is naturally and properly testing the work, not only of the students, but also of the instructors, and especially of the tutors. For these last it must set a standard and by them it is likely to be thought a little severe. The scope of course instruction is in fact enlarged by the tutors, and the examiners require a more symmetrical

and well-rounded preparation than course instruction alone would give. Moreover, it may be noted that the material with which to prepare for the examination must be accessible to the students. It must be in books. Undergraduates cannot be expected to make their preparation a matter of research.

The foregoing comes from the experience of the division that has longest used the general examination; as does also the following discussion how far the questions should measure a knowledge of facts and how far call for analytical or judicial capacity. To prepare a long list of things every student should know makes the tutor a coach; and while an occasional informational question may be necessary to expose the loafers, the main part of the test should involve the exercise of judgment. Facts should be required, but not facts for their own sake. The object should be to measure grasp, the power to deal with facts; and a question demanding a real grasp of a subject cannot be answered without an adequate knowledge of the facts with which it deals. The best opportunity to show judgment in dealing with a large subject seems to be given by a question that demands an essay, and one such essay at least should be required. But to find suitable topics for essays is among the hardest tasks of the examiner. If the question is too narrow, it does not give a chance to enough men; if too broad, there is encouragement to thin generalizations. The wise course seems to be to give fairly wide options among fairly specific subjects. Yet carelessness in the use of options may unwittingly affect the entire character of a paper by enabling a man to pass on a very narrow accomplishment. To arouse the student, a question that sharply challenges accepted opinion is sometimes useful. In this way the call for comment upon a quotation often serves. The danger here is irrelevance in the reply. Plenty of time must be given and responsiveness insisted upon.

There is a perennial question whether separate papers should be set for distinction and pass men. The strong argument against separate papers is that they mean separate preparations, and this means inability to encourage the

able man who makes up his mind to try for distinction late in his college course. A better solution would seem to be an added paper for distinction candidates, or, better still, added questions on the regular papers. Groups of questions are frequently set from which distinction candidates must, and others may, make a choice.

These remarks, mainly drawn from a report by examiners in History, Government and Economics, may be regarded as fairly typical of the difficulties in setting a fair and searching examination, and the methods adopted for meeting them. A few sample questions in History and English, in the form of quotations requiring something in the nature of essays, will illustrate what is done. They are taken from the papers of June, 1926.

Mediaeval History

6. "In the period which followed the Germanic conquests, by far the most decisive influence was the alliance of the papacy with the Franks; it was, indeed, one of the most eventful coalitions ever entered into in history." Explain.

History of the Renaissance

5. "For a variety of reasons the sixteenth century was monarchical in mind as the twentieth century is democratic."

Modern France

10. "Napoleon's work was to fuse the old France with the new." Explain.

American History

1. "The central problem of the American Revolution was the true constitution of the Empire."

English Literature

"Show by an analysis of the content, style, and diction of three of the following passages, in what ways they are characteristic of (a) their authors, (b) the times in which they were written."

Then follow passages of about 25 lines from Swift, Wordsworth, Ascham, and H. G. Wells.

The general examination increases not only the work required of the student, but also the danger of his losing his degree, and this is no imaginary peril. The records of the last two years show that in 1924-25 there were 577

candidates for graduation in all the departments having such an examination, and that 518 passed it, while 59, or 10.2 per cent, failed. In 1925-26 out of 549 candidates 508 passed, and 41, or 5.5 per cent, failed; the smaller proportion of failures being largely due to the adoption of tutors by the departments of modern languages. Of those who fail a number try again in a later year and many of them succeed in passing. Of the men failing at first about one half pass a subsequent examination.

THE TUTORS

Lacking guidance on his way, the undergraduate would be at a loss to supply the gaps between his courses, to connect them, to fill in the background and survey the whole subject. For that purpose the tutors are provided. As soon as the student, at the end of his freshman year, has selected his subject of concentration he is assigned to a tutor in that field who becomes thenceforth his adviser in all his studies. Looked at from the standpoint of academic organization, the function of the tutor is to help the student to cope with the general examination; not by coaching or cramming—for an examination that could be passed by such means would have quite failed in its object—but by making him competent to pass it. Looked at from its effect upon the pupil, the purpose of the tutor is to lead him to educate himself by a thorough study of his chosen subject; and, if the system works as it should, these two points of view are in fact two aspects of the same design from different sides, two ways of stating the same thing. There is always the danger that the tutor may degenerate into a coach, carrying his pupil instead of guiding him, saving him effort instead of stimulating him to effort; and that danger must always be watched, but so far it has not shown itself here.

In describing the work of the tutor it must be borne in mind that the office means a function, not an academic grade. In most of the departments it has been necessary at the outset to assign tutorial duties to young men. Whatever their capacity, old dogs are usually disinclined to

learn new tricks. But as the young tutors have grown older, they have been promoted at the same rate as those who have been teaching in courses, until the tutors hold positions all the way from that of assistant or instructor, to that of full professor; and such is the declared policy of the university. Some of the older professors have, indeed, preferred to use part of their time as tutors; and this is done by the whole department of mathematics. Tutoring is one form of teaching, not less difficult or honorable than conducting a course. In fact, a large part of the tutors do both; a rough survey of the departments indicates that at least one-half of the tutors are also giving courses, and the proportion is tending to increase. In one of the subjects of concentration the head tutor thinks it desirable that every tutor should do so, not only for the stimulus to himself from teaching a course, but also because he believes that a man cannot know thoroughly the different mentalities of over fifteen pupils at the same time, and therefore should not have charge of more. At present the number of pupils to a tutor who devotes his whole time to this work runs from about twenty-five to forty-five, the general opinion being that the smaller of these numbers is not far from right.

The length and frequency of conferences with the tutor varies in the different departments. Sometimes they last only half or three-quarters of an hour, but more commonly an hour is assigned for the purpose. In a few subjects the conferences for the sophomores come less often than once in two weeks, but that is only in the smaller departments; the usual practice is once a week or fortnight for the sophomores and once a week for the juniors and seniors. But there is much diversity, and, in fact, the meetings with the tutors are more frequent than any rules prescribe, especially in the case of candidates for distinction who are writing theses and are constantly seeking advice at odd times. Normally the students meet their tutors singly, but in some cases it has been found advantageous for them to meet in pairs or in groups of three to five. The departments are experimenting, and the individual tutors are allowed no small latitude, for

much depends upon the personal quality of the students to be tutored.

The conferences with the tutor are by no means for the purpose of giving information; they are not in the nature of private lectures. Their object is to help the student to work out for himself the subjects that he is studying, and experience shows that the less the tutor talks, the better. He rather helps the pupil to work out his own difficulties. In short, the process is Socratic, not didactic. Moreover, it has as little to do as possible with the ground covered in the courses the student has taken. Sometimes, where the student has failed to grasp the subject of a course, it may be necessary to explain it to him; but in the main the courses are used, if at all, as bases for departure in other directions, or as fixed points to be connected in the field to be covered. In this the tutors seem to be almost universally agreed. The attempt to enlarge, complete, and, from various points of view, illuminate the field involves, of course, much reading quite outside the courses; and it has been found that one of the effective methods is to require the student to write a report upon the book or subject on which he has been at work, and discuss it with the tutor. These reports have been found very valuable, and their use has been increasing. Not only have they proved a valuable means of helping the student to a command of his subject, but one of the examiners reports that they have distinctly improved the quality of English composition as seen in the general examination.

The relation of the tutor to his pupil is peculiar, differing from any other in the college. It is that of a teacher, but not a teacher who sets examinations or gives marks. Nor is he supported by college discipline. Failure to attend the conferences he assigns is not reported to the dean's office; and although the tutor has a right to prevent a pupil who has been grossly neglecting his work from trying the general examination, it has never been exercised. Failure to attend conferences was formerly not uncommon; but it has steadily diminished, partly, no doubt, because in preparing for the general examination the need of the tutor has come to be

felt, and partly, it may be assumed, from the cordial relation that has grown up between tutor and pupil. The former is there to help the student as his guide and friend, and he is generally so regarded. His object is to develop the willing pupil, and provoke the listless to an interest in his subject. All this he could not do unless he was himself personally interested in his pupils. Naturally that is most obvious in the case of candidates for distinction, and the eagerness of the tutors that these men should succeed, and win as high a grade of honors as possible, is the more valuable because that spirit is caught by the pupils.

The system is tending to produce a broader type of tutor. Since he has to cover more ground with his students than the man who gives courses on his own chosen parts of a subject, he must keep up with a wider field, a fact that has manifest advantages. But after all, the system is still new, for we do not, and cannot wisely, copy the models of Oxford and Cambridge, but must seek to adapt to our conditions such methods as will make with our own a consistent whole. Every tutor is therefore very free to work in the way he finds most profitable for each student under his charge. Yet to compare experiences, to talk over their common problems, and to improve their methods, it is the custom of the tutors in the various divisions or departments to meet at luncheon every week or two for consultation. This is welding their work into an organic system.

EFFECTS OF THE SYSTEM

Before trying to judge the effect of the tutors and the general examination it is well to have clearly in mind the objects they are designed to attain. These are: to devote more attention to the undergraduate as an individual; to treat him as a whole being; to make him more largely educate himself; and to provoke in him an interest in so doing. The first of these hardly needs explanation. The former conception, drawn from Germany, that the function of a university is to provide wide opportunities for education,

of which the student may or may not take advantage, as he pleases, is passing into the background in America. Everywhere more attention is being given to the individual student, and that the tutor is a highly effective means to this end is self-evident.

The meaning of treating the student as a whole is not so clear. Owing to the process by which the elective system grew up, gradually substituting more and more electives for required courses, the course became the unit in education and a fixed number of credits in courses became the qualification for graduation. This was true whether the election was unlimited or restricted by certain rules of choice; and it was true both of colleges and of lower schools, so that in some form counting by credits became well-nigh universal in American education. It is a bad plan, because it measures by the process that has been gone through instead of by the result. It is bad also in making the course the unit in education when, in fact, there can be only one real unit—that is, the student himself. The course is merely a means to an end—the education of the student; and he is an end. The object of his education is himself, and that not as a conglomeration of intellectual fragments, but as a whole. The important thing is what he has become. Such a purpose would be most fully achieved if someone were omniscient enough to have the oversight of an undergraduate in all his studies; but this is impossible; and certainly, to have a tutor in a large field in which his principal work is done is far nearer to treating the intellectual life of the student as a whole than any system of courses can be; and, in fact, it does have that effect.

The third object mentioned—that of making the student more largely educate himself—is a highly important one. All true education above rudimentary, mechanical training is in the main self-education with assistance, under guidance and stimulation. The tutor can help, but he cannot supply the place of effort on the part of the student. Massage does not take the place of exercise in developing strength—a truth

that applies not only to the learning of a definite subject, but still more to preparation for the battle of life. So far has this been forgotten that to the public, and probably to most members of the teaching profession, the words "education" and "instruction" are synonymous; whereas in fact instruction is a means, and only one means, to education. For that reason there has been a tendency to teach too much and study too little. What we need is to provoke personal thought as compared with receptivity, and this is exactly the function of the tutor. It is his business, not to supply the student with information, but to tell him where he can find it; not to present to him ideas, but to make him work them out himself by reading and discussion—in short, to help the student to educate himself from books and other material within his reach. The chairman of the board of tutors in one of the largest departments reports that in his opinion "the great gain due to the introduction of the general examinations and the tutorial system is twofold: first, the student has been taught to view a field of knowledge as a whole, not as a series of more or less unrelated parts; second, the student has learned through his intimate discussions with his tutor to probe more deeply and independently into his chosen field of knowledge, the result being that he is better able to do work by himself."

The fourth object is to provoke in the student a desire to educate himself, and this must be done by arousing his interest in some subject. It often happens that one loses sight of the end by fixing his attention on the means. So strongly have American educators felt that a student cannot do good work in a subject in which he is not interested that they have been too much inclined to inquire in what he is interested, rather than to interest him in what he had better study. The fact is that most boys and young men have no very strong intellectual interests, and to ask them to select what they would like to study means in many cases a selection of that which they can study with the least effort. In short, the result of a selection according to natural interests

has been in large part a reduction of effort and of the educational value that comes therefrom. To some extent effort will come from an existing interest, but to a much larger extent interest comes from voluntary effort. The normal youth who can be induced to throw his powers vigorously into any intellectual study will find it interesting. That is the function of the tutor. His business is to stimulate effort by interesting, and interest by effort. Partly for this reason, we have applied the system not only to men who at the outset desire to be candidates for honors, but to all students, believing that all of them will obtain a benefit and that many of them, who have the capacity, will achieve a much higher grade of work than they would otherwise do. This may be shown by a table of the increase of candidates for degrees with distinction.

PERCENTAGE OF CANDIDATES FOR DISTINCTION IN SPECIAL FIELDS,
JUNE, 1923-26

<i>Year</i>	<i>Seniors and oc¹</i>	<i>All Classes</i>
1923.....	21.7	23.2
1924.....	28.0	31.8
1925.....	30.5	41.0
1926.....	39.5	47.0

Of course all these men did not win distinction, and the fact that certain privileges relating to absence from classes are accorded to those inscribed as candidates therefor has helped to swell the list. Perhaps a better indication of the effect of the new system may be found in the percentage of men who have actually attained distinction at graduation.

<i>Year</i>	<i>Degrees awarded omitting War Degrees</i>	<i>Degrees with Distinction</i>		<i>Degrees with Distinction in Subjects with General Examination</i>	
		<i>Number</i>	<i>Percentage</i>	<i>Number</i>	<i>Percentage</i>
1922.....	547	114	20.8	82	15.0
1923.....	581	139	23.9	111	18.9
1924.....	584	171	29.3	120	20.5
1925.....	637	177	27.9	136	21.4
1926.....	648	184	28.4	143	22.1

¹ ocC means out of course candidates—that is, students who do not take their degree with their class, but are preparing to do so later.

It seems to be the general opinion of the chairmen of the boards of tutors that a very large part, at least, of the increase has been due to the personal influence of the tutors; the chairman of the board in one of the largest departments remarking: "I view the entire increase in the candidacy for distinction as attributable to the new methods of instruction. . . . I think it safe to say that 85 or 90 per cent of the men capable of attaining distinction are now candidates for distinction. Certainly not more than fifteen, and probably not more than ten per cent of the non-distinction candidates for degrees have the ability to do much more than they are now doing." There is no doubt that the students work harder than they did. They have a more definite aim in their work; and it may be remarked also that something of the competitive spirit in their studies has been restored; for they regard the divisional examinations, as they call them, as a better test of ability and true scholarship than the examinations in the separate courses, where they feel that high marks can be more easily obtained by mere diligence and memory.

COST OF THE SYSTEM

The salaries of the tutors amount in the aggregate to a very large sum. In accordance with our practice of charging to a separate tutorial budget in many of the larger departments the salaries of the tutors, with the proportion of the salaries of men giving part time to that form of teaching, it is possible to make an approximate estimate of the cost. For the current year this comes to \$173,114. That is certainly a large figure, and if the system had been adopted all at one time it would have been impossible to meet the expense without additional endowment; but in fact it was adopted gradually in one department after another, and therefore it has brought no sudden great increase of expense. Moreover, since—as already stated—the tutors in each department were at first young men, they have begun with comparatively small salaries, which have increased as they

have grown older, and will not reach the normal cost for some time to come.

But the salaries of the tutors are by no means the only element in the problem. The question is not simply what they cost, but the expense of this system as compared with that which it replaced. Such a calculation, however, cannot be properly made in dollars, because all salaries have risen, or, to put it otherwise, the value of money has fallen so much that a comparison of the sums expended is meaningless. A far more accurate comparison is that of the number of students to a member of the instructing staff. This has the double advantage of eliminating the rate of salaries and also of eliminating the question of age, for about the year 1900 there was a large increase in the appointments of young men, and this happened again with the introduction of the tutorial system. In each case the salaries were at first small, but were certain to increase without an increase of numbers in the instructing staff. Taking, therefore, the number of students to an instructor at periods equi-distant, we find for the years 1890-91, 1908-09 and 1926-27 that the numbers of students and of instructing staff, including tutors, were as follows:

FACULTY OF ARTS AND SCIENCES						
	<i>Instructing Staff</i>			<i>Students</i>		
	<i>Instructors</i>		<i>Total</i>	<i>Harvard College and Graduate</i>		<i>Total</i>
	<i>In the Faculty</i>	<i>not in Faculty</i>		<i>College and Specials</i>	<i>Schools</i>	
1890-91	67	19	86	1339	110	1449
1908-09	135	53	188	2238	387	2625
1926-27	206	156	362	3329	864	4193

It may be observed that the number of students to an instructor was, in 1890-91, 16.85; in 1908-09, 14; and in 1926-27, 11.6. If the points representing these figures are plotted, it will be found that they fall almost exactly on a straight line. In other words, the rate of increase in the instructing staff to the number of students has been almost continuous, and unaffected by the appointment of tutors. What has in

fact happened is that in the earlier half of this time the aim was to increase the number of courses as largely as the revenues would permit. The ambition of the university and of all its departments was to give as wide an opportunity of instruction, to cover as many fields, as possible; and an increase in the revenue was used to appoint additional instructors and give additional courses. During the later half this idea has changed. It has been felt that it is impossible to cover by courses every part of every branch of knowledge, and that there is no object in so doing. It has been thought that in the main the courses of instruction were sufficient, and the additional revenue from the income of gifts has been used to pay for tutors instead of for additional courses. Looked at from this point of view, it may be said that the tutorial system has cost the university no more than a continuance of the previous policy would have done.

On the other hand, the change of policy has brought a new problem. The students having increased more rapidly than the courses, the number of men in each course has, on the average, become larger; and this in turn has increased the labor of the instructor. Moreover, with the improvement in the education of the students, with their stronger interest in educating themselves and hence their greater proficiency in their subjects, the quality of the courses has become higher, and the demand on the instructor more strenuous. To this must be added the burden from the large growth in the number of graduate students. Meanwhile the tutors also have found that the call upon their time has been distinctly greater than the number of hours they were supposed to devote to conferences. In particular, the candidates for distinction, who are writing theses, drop in upon them at all sorts of odd times, and break into the continuity of their own work. Now, in order to get the best men as lecturers and tutors, we must see that they are not at a disadvantage as compared with those in other places. They should have fully as great an opportunity to keep up with their subject and to make and publish their own con-

tributions to knowledge. During the current year this subject has engaged the attention of the faculty, and, considered from the point of view both of the instructing staff and of the students, a plan has been devised for two periods in which, save for the elementary courses, there shall be neither lecturing nor tutoring, but reading by students on their own account. The first of the periods comes between the Christmas vacation and the mid-year examinations, the second from the seventh or eighth of May to the final examinations. During the latter period, indeed, both the general examinations and the examination of candidates for the doctorate of philosophy will take place, and the tutors' conferences with the seniors, but not with other pupils, will continue. The object of these reading periods is twofold: first, to relieve the work of the instructing staff, which is now believed to be more strenuous than in most colleges, by reducing the teaching period to about its length in a European university; and second, to make the student appreciate more thoroughly the fact that his improvement must come through self-education. For the seniors there will be no difficulty in this regard. The candidates for distinction will be busy with their theses; the others sobered by the terrors of the divisional examinations. On the other hand, the sophomores and juniors are to have reading carefully laid out for them by consultation between the tutors and the instructors whose courses the men are taking; and the mid-year examinations will measure how far the reading has been conscientiously done. No doubt at first some sophomores will not appreciate the importance and gravity of the task, will think they can do their reading in a few days at the end, will fall into mishaps, go on probation or have their probation closed; but that is the inevitable accompaniment of any improvement in education. It may be added that the freshmen, who have no tutors, are not affected, the courses open to them being treated as elementary.

This is certainly a great innovation, but here we are accustomed to innovations. Among the most precious of

our traditions is that of perpetual change. Change means experiment, and experiment means doing things which one does not at first know exactly how to do aright. This plan, which has now received the approval of the governing boards, is another long step in the direction in which the college has for a score of years progressed.

A. LAWRENCE LOWELL.

The Yale Bureau of Appointments

THOUGH glad to comply with the request for an outline of placement procedure at Yale University, I cannot but approach the task with embarrassment at our shortcomings in this field. These observations are accordingly based rather on what we would like to do than on what little we have thus far been able to accomplish. Our industrial placement service growing out of other activities of the Bureau of Appointments is still comparatively in its infancy. It has as yet by no means attained the ideal, well-rounded growth which the needs of our students would warrant, but for the development of which existing facilities are as yet inadequate. Before describing the senior placement procedure it may be of interest to discuss briefly certain other phases of the bureau's work.

1. *Student Employment* embraces all of the work of finding employment for men earning their way and the total registration of this department is about 1,700, of which about 1,400 are "active" in any given year seeking either term-time or vacation work or both. Last year \$339,334 was earned by students from work which this department secured for them directly. This involved filling nearly 4,500 different term-time positions divided among about 1,000 students and totaling \$225,000 in term-time earnings; while 450 men were placed in summer vacation employment directly through the bureau. This represented 26 per cent of the university enrollment and 81 per cent of the net total "active" registration. Work for board at Commons and at other eating places represents the most important single means of term-time employment, the next most significant being the Student Agencies, a recent development. Local industrial conditions and the comparative inflexibility of our student classroom schedules both make it difficult for students to find regular employment in stores or factories. The student agencies are an attempt to increase opportunities for earning money on the campus, and last year some 350 men earned about \$40,000 through these media. Practically every

commodity or service in demand by the university community has now a student agency representative and in certain fields such Agencies have proved very profitable. These maintain regular competitions for election to their Managerial Boards. Another important factor in the recent growth of student earnings at Yale has been the advice and cooperation of leaders in undergraduate activities through the formation of a Student Advisory Council. This gives advice from the undergraduate point of view on expenses, scholarship aid, possible means of earning money, etc., selects managers for certain of the agencies and program privileges, and helps create in general a student attitude favorable to the bureau and its undertakings.

2. *Scholarship and Loan Aid* amounting last year to \$254,000 divided among nearly 800 students was administered through this office, which, either directly or through appropriate committees, controls the award of all financial aid to undergraduates and a substantial part of such assistance for graduate and professional students as well. At Yale such aid, while apportioned primarily on the basis of students' scholastic achievement and all-round promise, is in each case largely determined by the individual's financial need. Hence the Bureau of Appointments, which is best able to judge the need and degree of self-support effort of each student, logically directs the selection of scholarship beneficiaries. The general average of all scholarship holders is about 80 (honors), which is excellent considering that these same men must be devoting substantial time and effort to self-support, in order to qualify as well on the ground of financial need for such aid.

3. *Teaching Appointments*.—We maintain a teaching and placement service for seniors and graduate students, as well as for graduates. The number of active registrants in any given year is relatively small, so that the number of teaching positions we fill is only between 125 and 150 each year. Many of these are, however, quite important positions, so that the significance of the service is greater than would be indicated merely by its volume of placements.

4. *Industrial Department.*—This deals with the student's problem of finding the right position upon graduation. As about one-third of our undergraduates are registered with the Bureau of Appointments for self-support employment and such men naturally comprise an even larger proportion of applicants for teaching or industrial positions upon graduation, it follows that such business or teaching placements in many cases are the culmination of four years of personal contact and advice. Nearly half of the graduating senior applicants, however, have not had to work their way and have therefore not previously registered with the bureau. While part-time student employment is offered only to such men as need the earnings to help meet their own expenses, of course no such distinction is made when it comes to placement in full-time positions after graduation. The rapid advance in both the quality and number of students registered with this department of the bureau during the last three years evidences the need for and interest in this service. We are in touch with about 1,200 industrial organizations throughout the country and have positions for over 500 men listed annually for consideration of the senior class. Last year, of 220 seniors registered, 138 or 63 per cent were directly placed by the bureau. Almost every day from before the first of March until late in May we had representatives of one or more companies here interviewing seniors. The information about careers thus obtainable is of real help to many students. Obviously the industrial placement service should be coordinated with a comprehensive student personnel program, for which there is a crying need. This should include really careful analyses of each student's background, equipment, training and inclinations, so that the placement work may become part of a scientific and broadly conceived plan of vocational advisement which is naturally our desired goal.

The university recognizes the responsibility for advising graduating seniors and helping them find their first position. However, the obligation for subsequent replacement is, we feel, on a somewhat different basis, and therefore the place-

ment of graduates who have already left the university is centralized at the Yale Graduate Placement Bureau, Inc., at the Yale Club, New York City, under the able direction of Mr. Samuel S. Board, '11. While no charge is made for any of the service rendered by the university at New Haven through its Bureau of Appointments, the Yale Graduate Placement Bureau is an incorporated organization charging a placement fee (though one somewhat smaller than the regular commercial charge). The work of the Yale Graduate Placement Bureau is coordinated with that of the Bureau of Appointments through university membership on its Board of Directors, which includes representatives of the Undergraduate Faculties, the Bureau of Appointments, the Alumni Advisory Board, the Yale Club of New York City and other graduate organizations. Needless to say, the Yale Graduate Placement Bureau is not organized for profit.

Although we have secured no complete data as to the placement needs of the entire graduating class, a partial survey last year indicated that 37 per cent have definite business positions in view and that 28 per cent expect to continue in graduate or professional schools. This leaves only about 230 men or 35 per cent of the graduating class, who might be expected to register for placement in senior year. Last year 220 seniors, 33 per cent of the class, did so register. The following figures from the director's last annual report give detailed data as to the registration and placement of these men.

INDUSTRIAL PLACEMENT STATISTICS

<i>Nature of Employment</i>	<i>Number of Men Placed</i>
Advertising.....	3
Banking and brokerage.....	17
Engineering.....	33
Insurance.....	10
Mercantile and office work.....	24
Miscellaneous.....	1
Production.....	16
Publicity.....	3
Sales and sales engineering.....	17

DISTRIBUTION OF REPORTED INITIAL SALARIES

<i>Salary</i>	<i>Number of Men</i>
\$1,200-1,300.....	11
1,300-1,500.....	42
1,500-1,800.....	47
1,800-2,000.....	20
Over 2,000.....	4

 124

The mean and the median of reported salaries are both approximately \$1,400.

REGISTRATION

Registrants:

College Seniors.....	90
Sheffield Scientific School Seniors.....	105
Graduate Students.....	14

 209
Placements:

College Seniors.....	55
Sheffield Scientific School Seniors.....	65
Graduate Students.....	4

 134

Percentage of all industrial registrants directly placed—60 per cent.

INDUSTRIAL AND TEACHING PLACEMENTS OF GRADUATING SENIORS

Senior registrants for industrial positions.....	195
Senior registrants for teaching positions.....	25

 Total Senior registration for positions after graduation..... 220

Seniors placed in industrial positions.....	120
Seniors placed in teaching positions.....	18

 Total Seniors placed..... 138

Percentage of Senior registrants directly placed—63 per cent.

The senior industrial registration begins immediately after the close of the Christmas vacation, and during January and February the emphasis is on personal interviews with applicants. Many students are uncertain as to what positions they wish to secure, and some are in a complete and almost impenetrable fog regarding what to do after graduation. Two interviewers divide these initial conferences and

rate the applicants subjectively on the following traits as judged during the interview: (1) Appearance and personality, (2) willingness and attitude, (3) experience and poise and (4) dependability and care. A subjective combination or summation of each of these four separate ratings is also made. Additional estimates are based objectively upon extra-curriculum achievement, scholastic achievement and mental test classifications. The final rating is simply a combination of the objective and subjective estimates. A seven-point scale is used. Last year the final ratings of the two interviewers agreed as follows for the men who were registered and had been interviewed up to the time of the Easter vacation.

RATING

	C—	C	B—	B	B*	A	A*	Total rated
Distribution of first summation ratings given (combination of subjective estimates) by A. B. C.....	0	9	7	14	23	25	7	85
Distribution of first summation ratings given (combination of subjective estimates) by D. W. B.....	0	9	9	13	20	26	4	81
Distribution of final ratings after combining objective criteria (mental test classification, scholastic standing and extra-curriculum activity rating) with the above first summations...	2	8	38	56	28	28	6	166
	2	26	54	83	71	79	17	332

No tabulation of individual ratings assigned was made as the interviewing proceeded so that the conformity and distribution of final summation of subjective estimates was rather surprising. For our own guidance we studied the relative conformity of each of the four subjective criteria rating mentioned above and found close agreement with respect to the first (Appearance and Personality) and third

(Experience and Poise). About 50 more students were rated after this comparison of previously assigned ratings had been made. The distributions show some preponderance of ratings in the first summation distinctly compensated for when the introduction of objective criteria has been made.

The registration blank which seniors fill out before the initial interview has evolved gradually and now appears to serve fairly well both our needs and those of the prospective employers. It gives data concerning the student's scholastic, extra-curriculum and previous employment record (in self-support or otherwise), as well as other personal data on one side; and, on the reverse, additional information more specifically related to the work he is seeking. A comprehensive list of possible occupations for the registrant to choose between has proved useful. In the initial interview we try to ascertain first the extent to which the applicant knows what he wants. He may have quite a definite idea as to the sort of position he seeks. If so, we regard him as practically placed then and there. In most cases he has a general idea that he does or does not want to do thus or so. Then we try to find out how well founded this idea is and upon how much real consideration or knowledge of the occupational opportunities his attitude is based. If he is completely at a loss, we do not attempt to force any sort of decision for the time being. The general procedure is naturally different for the men who know what they want than for those who are undecided. We seldom attempt to unsettle a definite vocational purpose which is already well fixed, though there are occasional cases where it is advisable to do so since the individual appears obviously unsuited for the career which he wishes to follow. Most of the men who have made a definite decision also make a good impression upon prospective employers, so that advice to such men consists largely of helping them to decide which of several offers to accept. Those who are undecided must be helped to analyze themselves, their potentialities and their attitudes towards this or that general type of work. We do not

believe in making these decisions for the men, though frequently they wish us to do so. We try to furnish them with as much information as we have at our disposal (which is certainly all too little), but the responsibility for occupational decision definitely rests with them. We do not believe that our personal impressions or any objective criteria we have yet employed are sufficiently reliable to justify us in relieving students of that responsibility.

The specific media which seem most effective in our placement procedure are employers' interviews and the bulletins issued both to employers and to registrants. We have about 200 firms sending men here in the spring to talk with graduating seniors. Most firms realize the importance of the personal impression made on the senior by the representative, and consequently the caliber of the man visiting is high—frequently one of the chief executives in the company. In most cases such men are usually glad to give general vocational advice and to talk freely and helpfully even with candidates who are not so much interested in the particular company represented as in obtaining specific occupational data. We are afflicted, to be sure, with our share of the less helpful and broad-minded propagandists and zealous pied-pipers who seem to feel that if they can only rope a man they can somehow keep him tied—even to a job which calls for only half of his ability. Such are not invited to return. Many more firms wish to come and talk with our seniors than we can really accommodate, since the time is limited and our quarters are small. That enables us to choose, on the basis of previous experience, information about the particular opportunities, and general attitude of the company and representative so as to limit our contacts to those firms who cooperate most helpfully with us and with our registrants. In certain lines we restrict rather sharply the number of firms for whom interviews are arranged, because if the number of positions largely exceeds the applicants available for and interested in that particular line of work, and no such restriction were made, we would be wasting our time and the employers' and keeping other firms away. We do not

make arrangements for any company that does not furnish us with satisfactory advance information about the position, or whose financial stability is doubtful. The information we require is not very detailed, but occasionally we find firms unwilling or actually unable to give us sufficiently definite knowledge of the opening in question to enable us or the seniors to judge its merits at all. In those circumstances we decline to make recommendations.

The firms arrange in advance, then, for their interview dates and furnish us with a simple outline of the position, salary offered, nature of work, etc., which enables the registrants to judge which representatives they wish to see. Each week the registrants are sent a list of the following week's interview dates, and they come in and make appointments to see those representatives with whom they wish to talk. Usually from twenty to thirty men will sign up to see each firm; and if two or three such firms are here on the same day, part of the Bureau of Appointments staff have to move out into the back yard and the rest soon seek the nearest asylum. The seniors are usually anxious to talk with as many firms as possible and are quite enthusiastic about this means of securing vocational information. Many of the men registered with us would probably have no difficulty in "finding a job." We feel that the opportunity to acquire occupational information through many such interviews, and consequently to make their ultimate decision upon the basis of sounder criteria than they would otherwise have, is in fact to the senior the most valuable part of the placement service. Unfortunately our facilities have not enabled us to make any sufficiently thorough follow-up study to confirm our impressions objectively, but we believe that the placements effected by the present method are considerably more stable than they would be without such series of personal interviews. The student's own approval is evident from the number of firms most of them want to talk with each year and the increasing proportion of registrants which has more than doubled in the last four years—as has also the number of firms sending representatives here for such interviews.

The bulletin already referred to has proved an effective medium for stimulating interest in men on the one side and in jobs on the other. We started the bulletins descriptive of registrants before we began to develop the campus interview procedure and found that such bulletins, listing individual registrants and their records classified by key numbers, produced a much larger proportion of inquiries and offerings than did any other circulars or even personal letters of a general nature. Two years ago, after the employers had begun to come to us in considerable numbers, we began using a similar bulletin descriptive of positions for the men. In fact the mere scheduling of specific appointments totaling nearly 3,000 in number during the spring months and making the occupational data available to the men and the registrants' records to the employer, in each case, is in itself no small task. Therefore we are forced to rely more and more on the self-service procedure with reference to interviews. That is, we usually do not pick out from our registrants a list of men whom we should recommend to the employer, or vice versa. By bulletining both parties we have the employers notify us of men in whose records they are particularly interested, and the men tell us of jobs which they wish to look into, so that much of the pre-selection for such interviews becomes relatively automatic. For certain special positions, of course, we may spend considerable time upon pre-selection and specific recommendations, but in the majority of cases this is neither necessary nor desirable initially. After the contacts have been established, however, we discuss at considerable length the apparent suitability of men for specific positions, and vice versa. Our first question is that of providing means of contact, largely without advice by us; the guidance—such as it is—comes later.

Gradually, then, the senior arrives at his occupation decision on the basis, first, of preliminary interviews concerning the general nature of the work he wants and later, after more specific interviews, as to what particular job he wants. We encourage the wholly undecided man to talk

with a number of firms for at least a month, before even trying to make any decision, because his apparent purposelessness is usually due to such a genuine lack of occupational data that it is obviously impossible for him to narrow his choice until he has developed more of a background of information.

It is apparent from all this that the placement procedure at Yale is still largely of a hit-or-miss nature. It is fairly effective in actual percentage of registrants placed and as judged by the attitude of students towards it—a fair index, since it is partly dependent upon the reactions of preceding classes. Its real effectiveness however is not known because we have not had facilities for following up the results of our own work. In fact, the industrial placement service has been developed and grafted on to the other functions of the Bureau of Appointments without any special appropriation for the purpose and consequently has been handicapped by lack of funds. That is one reason why we have not experimented more with objective tests, rating technique, etc., and why we have developed so little vocational guidance proper. The Freshman Year Councillor system is probably the only present mechanism at Yale which could be regarded as potentially a nucleus for orientation and guidance. This councillor system, however, is part of The Freshman Year set-up and in no way related to the Bureau of Appointments. We have no central personnel organization at Yale and no cumulative record system, so that we have to start from scratch in our placement procedure in the senior year, except for the men who have been working their way through college. That is one important reason why we feel unjustified in offering guidance and why we are unwilling to advise students more than we do, concerning their fitness for one or another career.

We realize how largely deficient the procedure described is, with respect to both of the essentials upon which wise guidance and placement necessarily depend. We do not know nearly as much as we ought to about either the man or the job.

The Bureau of Appointments is not by any means, however, a full-fledged personnel office and has not the advantage of cumulative records which such an office can develop. We are still merely an employment bureau, and, in order to secure all the data about registrants which we want, it is necessary to collect it here and there from various other offices. Many institutions have excellent centralized records and personnel facilities and thus can more readily evaluate the qualifications of individuals than we can. But in respect to knowledge of opportunities, all placement and personnel bureaus are, equally with us, still working largely in the dark. More accurate estimates of individuals will doubtless follow eventual centralization of all personnel functions and adoption of a cumulative record system for all students. The experience and accomplishments of other universities can guide us here, whenever funds are provided to meet this obvious need. But the other necessity—dependable occupational information of the kind we and our students want—offers a far harder problem. Such data are—at least so far as we know—not today available. Their collection involves a long and arduous quest and one which can probably best be attempted by cooperative effort. To that end, officers of the university and of the Yale Graduate Placement Bureau, Inc., have outlined a tentative program for a series of occupational monographs, in the hope of stimulating interest towards attack of this problem. This has been brought to the attention of the American Council on Education, the Association of Eastern College Personnel Officers, the American Management Association, and the National Association of Appointment Secretaries, etc., in the hope that the program suggested may be sponsored by one or more of such organizations and definite plans laid for its development. We believe that improvement of guidance and placement procedure necessitates a series of studies all made on a *uniform and comparable basis* and following a predetermined pattern. Such information as is already available is neither so codified as to permit of comparative analysis nor particularly reliable. Along many lines it is very incom-

plete and in almost none does it include all of the data that the college student properly seeks. We believe that, for each business and professional career of interest to the college man, certain information should be collected, of which the following is a condensed outline:

1. General description of the occupation, its historical development, its present status and relation to other occupations; its social advantages and handicaps.

2. A functional job-analysis outlining the work actually to be done in successive stages and various divisions of the occupation. Emphasis should be placed upon objective factual data rather than on subjective opinions, i. e., on the work to be done rather than supposed characteristics of the individuals required to do it. The more carefully, definitely and frankly these job specifications can be worked out for a given career, the more effective will be the exposition in behalf of that career.

3. The place of the college man in the occupation. Relative proportion of college men heretofore, and present trends in this respect. The proportionate representation of college men at different levels and in different types of work. Typical method of assimilation of college graduate and opportunities offered for his orientation and training, initially and at successive critical levels.

4. *Salary schedules.* A statistical study based on previous experience, giving median salary and salary ranges for the occupation as a whole and for college men separately, taking cross sections at such temporal stages as: starting point, end of one year, end of three years, end of five years, end of ten years. *Salary predictions based on past experience* in different occupations, while involving no promises for the future, will offer an opportunity for comparative analysis and establish criteria by which both men and their employers may better judge what is a successful rate of progression. Probably no occupational data are more vitally needed today than this.

5. *Desirable training and characteristics.* Specific physical or mental qualities of importance in a given career (this refers to special traits and not to general moral qualities which today clutter up much of the so-called vocational literature); training requisite for general advancement in the occupation or for special types of work therein, practical experience of value and facilities for obtaining such experience through try-out employment, vacation work, etc.; training offered within the occupation; advantages of advanced specialized study beyond the undergraduate courses.

We hope that a cooperative group representing various colleges may first determine in greater detail and better than we have done, just what sort of information is desired. The

mechanism of collecting it (once the pattern or outline of what we want has been determined) would be to secure the cooperation of industrial and professional authorities, by whom alone such data can be furnished. We can write our specifications as to what information we want, but only the different companies, associated groups and professional bodies can fill in the outlines for us completely and reliably. The collection and correlation of the data should be made by trained investigators working under the general direction of a committee representing the cooperative bodies.

Placement technique still really differs but little from the old grab-bag system, except perhaps for the size and number of the bags. Better means of judging registrants are already being developed at various institutions, and we hope that the other need will eventually be supplied, through such a plan as outlined, for the collection of reliable data concerning occupations. Until these essential bases for guidance have both been further improved and facilities for experimental investigation and follow-up analyses provided, we shall all continue to work on a rather elementary level. Meanwhile at Yale we recognize our shortcomings so strongly that we feel it is unwise to attempt definite vocational guidance without first establishing more satisfactory criteria. Hence we act largely as an impersonal intermediary between prospective employer and employee, leaving the responsibility of choice to the specifically interested parties. Even were the data at our disposal and the technique of guidance methods far more reliably developed, however, I doubt if we should wish to relieve the individual of responsibility for his own choice. The more reliable, complete and objective data we can put into the hands of both prospective employer and applicant indeed, the more confidently can this responsibility be placed not upon the adviser, but upon the student, where it belongs.

A. B. CRAWFORD.

Evaluation of Orientation Course At Minnesota

THE ORIENTATION course was introduced at the University of Minnesota in 1923-24. It was built from the ground up by an enthusiastic and hard working committee believing in the need for and the value of a survey course for freshmen covering the fields of natural and social science. This is not the occasion for attempting to set forth in detail the aims or content of the course. Briefly, the general aims, as set forth in the Arts College bulletin, are: A course intended to orient the student in the world of nature, and of organized society, and to arouse in him a consciousness of his relationships and a realization of his responsibilities. The content covers the following fields during two quarters meeting five hours a week; Astronomy, Structural Geology, Historical Geology, Biology and Eugenics, Psychology, Social Origins, Geography, Economic Order, Political Order, and Cultural Expression and the Fine Arts.

This course is unique in the fact that from its inception in 1923 every effort has been made to plan the conduct of the course experimentally so that quantitative evaluations of various procedures would be possible. From the outset I have served as "research member" of the staff and wish to take this opportunity of acknowledging the kindly cooperation of each member of the staff in affording this unusual research opportunity.

In organizing the material for this report I found it difficult to subordinate the mass of detail involving a multitude of correlation coefficients and to bring out in relief the main trend of the results. This difficulty was due not only to the detail but also to the number of problems attacked. Still further difficulty arises because much of the research bears directly on phases of the course administration having only local significance.

Perhaps a mere statement of the main problems attacked along with some of the more outstanding results will best serve our purpose.

PROBLEMS ANALYZED

1. *Predictive Devices.*—Can so-called intelligence tests and placement tests be used for predicting in advance the most probable achievement of individual students in the course?

2. *Examining Devices.*—What is the most reliable and valid method of measuring achievement in the course? The question is directed toward the relative merits of objective examinations and essay examinations. A further question has to do with the determination of the maximum reliability possible in our examining procedures.

3. *Grading System.*—To what extent does the grading method reward merit according to the actual distribution of ability among the students? To what extent are the standards set up adhered to from year to year?

4. *Measuring Progress.*—Can we measure improvement in range of information and knowledge of principles as a result of six months instruction? Is the improvement so measured markedly in evidence?

5. *Measuring Extent and Causes of Student Elimination.*—To what degree does the course hold its students throughout the two quarters? Is lack of capacity a major factor in elimination?

6. *Motivation.*—Are the students motivated to work up to their maximum capacity?

7. *Sectioning on Basis of Ability.*—Does sectioning students into homogeneous ability groups result in increasing the effectiveness of instruction for bright, mediocre, or dull students?

8. *Effect of Size of Sections.*—Is size of class a factor affecting the effectiveness of instruction?

9. *Student Opinions and Aptitudes.*—To what extent do students hold favorable or unfavorable attitudes toward instructors, course content, and class methods? To what extent do the students place their stamp of approval upon

the objectives of the course? Do they believe those objectives are realized?

At the outset permit me to state that all of these questions have not been definitely answered as yet, nor have all of the available data been squeezed dry in the attempt to answer the questions. In other words, our three years collection of data is still in process of analysis.

Predictive Devices.—Using the Minnesota College Ability Tests and a specially constructed Orientation Information Placement examination, we can predict achievement at the end of the first quarter or at the end of the second quarter with a fair degree of accuracy. Generally speaking the correlations range between $+0.45$ and $+0.60$. A combination of both devices does not yield a better prediction than either one alone because of the high intercorrelation between them. We may consider the prediction to be surprisingly well done in view of the fact that we are predicting achievement in a single course in which there is fluctuation in individual student's achievement from one quarter to the next. It has been apparent that the prediction is sufficiently close to warrant sectioning the students into homogeneous groups at the beginning of the course.

Examining Devices.—One of the first problems attacked experimentally was that regarding the comparative reliability and validity of new type versus old type examinations. The method of systematic alternation of new and old type examinations throughout both quarters was used. Many members of the staff believed at the outset that the new type examinations measured chiefly mere information or memory, and that the old type examinations measured reasoning ability. The results bearing on this point were published in *School and Society*, August 21, 1926, and may be summarized by saying that both types of examination appear to be measuring the same mental functions. The advantage of greater reliability is clearly shown for the new type objective examinations. Furthermore, by comparing each type of examination with final grades in the course the new type examinations prove to be more valid. As a result of these

findings the staff has adopted the policy of using new type examinations almost exclusively. Thus, objectivity of grading is assured. The efforts of the staff continue to be directed toward further improvements in the examining materials devised for the course.

Grading System.—The method of using new type examinations insures that grades will be awarded in conformity with the measured abilities of the students. The question of adherence to standards set up is of local concern only, hence will not be discussed in this paper.

Measuring Progress.—Since no one knows how much improvement we should expect as a result of six months instruction, we were forced to measure improvement in a rather arbitrary manner. We have done so by giving the Orientation Information Placement Test at the end of six months instruction as well as the beginning of the course and noting the increase in raw scores. The average score at the beginning of the course is in the neighborhood of 55 points with a standard deviation of 17 points. The average score at the end of the course is about 95 points with the same standard deviation. In spite of this marked improvement the correlation between beginning and end is about $+0.77$. This means that the whole group moves up on the scale each individual tending to maintain his rank within the group. This is another confirmation of the general principle of the high correlation between initial and final status in learning experiments. Analysis of the correlation scatter graphs brings out some interesting comparisons. About 2 per cent of the students know as much on the first day of the course as the average student knows after six months instruction. On the other hand, practically all of the students who survive for two quarters know as much at the end as does the average student at the beginning. There are also instances of little or no improvement as a result of six months instruction as well as instances of very marked improvement.

One other point is worth noting here; namely, the lack of correlation between intelligence test scores and points gained in the information test. We interpret this fact by saying

that profit from the course is not confined to the brighter students alone but rather that all levels of ability seem to be profiting to about the same extent. This seems to indicate that the course is adjusted surprisingly well to the range of talent registered in the course.

Retention and Elimination.—A check on retention and elimination of students during the two quarters is being made systematically. The resulting information is of value in estimating the probable shrinkage from one quarter to another thus enabling the administration to utilize its instructional staff more economically. The figures will have increasing significance as a rough measure of student morale in the course. So far the shrinkage is about 30 per cent and seems to be caused chiefly by initial lack of sufficient intellectual capacity to survive the failing standards set up.

Motivation.—Since one of the objectives of the course is to stimulate the imagination and to arouse intellectual enthusiasm of students at the outset of their college careers, it is important that we devise ways and means of estimating the degree to which the students are motivated to work up to the limit of their capacity. The best index so far available seems to be the size of the correlation between intelligence test scores and final grades earned in the course. Theoretically, if our intelligence tests are reliable and valid academic aptitude tests, then the correlation between intelligence scores and achievement in the course should approach unity as we succeed in motivating each student to do his very best. This presupposes that achievement is likewise measured accurately. We have a highly reliable set of intelligence tests and we are measuring achievement as objectively and reliably as we know how. On the basis of Crawford's work at Yale and much other work in the field of measurement, it would seem that we are justified in using the correlation between intelligence and achievement as an index of motivation. In summarizing the results we note that the correlation is higher for this course than for the usual run of freshmen courses. This would indicate a healthy state of affairs. Analyzing the figures more closely,

we note that for each of three years the correlation is lower for the second quarter than for the first quarter. This would indicate a possible let-down in effort as the students pass from the natural sciences to the social sciences. Student attitudes toward the work of the two quarters suggests this since there is a strong trend toward a decided preference for the work of the first quarter. The staff is now attempting to ascertain the causes of this shift in preference in order to bolster up the work of the second quarter. A curious drop in correlation occurred during the second quarter this past year. In fact a correlation of only $+0.38$ was found. In tracing out the factors responsible for this unexpected and exceptionally low correlation we apparently find that it is due to a marked disturbance in student attitude occasioned by an unusual number of changes in instructors from the first to the second quarter. We note 13 cases last year in which performance shifted definitely and markedly simultaneously with a shift in instructors. In those sections where the same instructor carried the student through both quarters these shifts in performance do not occur. If this trend should be confirmed this year we would need to abandon the policy of shifting instructors at the end of the first quarter. This matter is mentioned at length in this place as an illustration of the direct bearing of research findings on administrative policy.

Sectioning of Classes.—For two years an experimental sectioning of students was effected. Two kinds of sections were organized simultaneously; namely, heterogeneous sections which contained all levels of ability and homogeneous sections of either high, medium or low ability. Analysis of the effect of sectioning, while not yet complete, fails to reveal any apparent advantage for such procedure. The correlations between intelligence and achievement for the homogeneous sections are no higher than for the heterogeneous sections (combined of course for purposes of correlation) hence there is no indication that the bright students are motivated to a greater extent by being segregated. The negative character of these results must not lead us to con-

demn the idea of sectioning. We are inclined to believe that techniques for teaching a bright section or a low section have not yet been discovered by the instructors hence the possible advantages of sectioning fail to materialize. At the present time the staff has abandoned the sectioning procedure, chiefly because no one recognizes the low group as a teaching opportunity and no one strongly argues for the privilege of teaching a bright section.

Effect of Size of Classes.—The results on this point have not been analyzed thoroughly as yet. Our first impression is that the instruction is as effective in sections of 45 or 50 as it is in sections of 25 or 30. Further analysis and further experimentation will be needed to confirm this impression.

Student Opinions.—From the start the staff has desired to obtain the students' frank reactions to the course. Only some of the more interesting of these reactions will be reported here.

1. From 90 to 97 per cent of these students would recommend the course to a brother or sister who might be coming to the university.

2. As stated before, the trend of opinion definitely favors the work of the first quarter. Roughly speaking the large majority favor the natural science material as against the social science material.

3. Reactions toward each of the ten sections of the course were obtained. The students consistently claim greater interest in psychology, cultural expression and the fine arts, biology and eugenics, astronomy and social origins. They seem to be least interested in the economic order, the political order, historical and structural geology, and geography. There is reason to believe that these preferences are dependent upon the suitability for survey purposes of the readings and assignments covering the different fields of inquiry. Departure from traditional orthodox text material seems necessary if the interest of the students is to be elicited and maintained. Analysis shows that these interest preferences are determined by the materials available rather than by the interests and specialties of the particular instructors. There

is a very low correlation between the interests these students claim and the effort they believe they put forth in coping with the ten fields of study. Here are additional data at variance with the doctrine of formal discipline. In other words, these students are not interested in a field because it is easy. Neither do they lack interest in a field because it is difficult. If we accept these attitudes at face value then it would seem that efforts to select interesting study assignments need not result in any lessening of effort on the part of students.

4. From two-thirds to three-fourths of the students indicate that the orientation course has influenced or will influence them in the choice of college subjects. Here is positive evidence of an educational guidance function being performed by the course. In specifying instances of influence we note that such subjects as Sociology, Psychology, Economics, Astronomy, Animal Biology, and Geology head the list. It would seem that a frequent objection to survey courses on the ground that such courses are so superficial as to kill a student's desire for deeper knowledge is largely unfounded.

5. From two-thirds to three-fourths of the students state that their instructors encouraged them to think for themselves. This is another encouraging evidence that the course is not functioning as a mere fact dispensing machine.

6. The great majority react favorably toward the personalities of their instructors regarding them as being very patient, inspiring, fair and considerate in their dealings with the students and as being just in grading and marking.

In conclusion permit me to stress the importance of conducting such research work not only for an experimental course such as Orientation but for as many courses as time and funds will permit. In my judgment such research if extended to other courses would in time enable us to place the administration of our collegiate curriculum on a basis of ascertainable fact rather than on the usual basis of belief, opinion, and judgment based on impressions gained from experience.

DONALD G. PATERSON.

A Vocational Interest Test

APPARENTLY the only way to be sure that a vocational guidance test can be relied upon is to try it out on young people and then wait twenty to thirty years to check up the test scores with the careers of these people. Even then there will be some complications. For example, suppose the test indicated that Mr. A. should be a lawyer, but he became a successful physician, we should not know whether he might not have been a successful lawyer if he had entered that profession.

Obviously a procedure requiring twenty to thirty years of time cannot be employed during the exploratory period when one is endeavoring to find a test for guidance purposes. What is a feasible program? Given a test that looks promising, how may it be tested out in order to determine its value?

First, a test should differentiate the men in a given occupation from men in other occupations.¹ This requirement is readily met. All that is necessary is to select men from a number of occupations who are so clearly successful in them that they would be so rated by any standard, and try the test out on them. If it separates men in the given occupation from those in the other occupations, the test fulfills this condition.

Second, the test should differentiate the successful men in the given occupations from the failures, or near-failures. Obviously, a vocational test that is responsible for some men entering an occupation only to fail in it lacks value to that extent. A high correlation between test results and degrees of success is desirable, of course, but not necessary. To

¹It is conceivable that an efficient guidance test might select those who should enter a given occupation and yet not differentiate men already in the occupation from those not in it. But the writer cannot see how such a test could be standardized without waiting long periods of time.

insist upon such correlation at the present time is to increase tremendously the difficulty of developing a vocational guidance test. For there are no definite standards as to what constitutes success, and when such standards are set up it will be a difficult task to measure them. For example, how reduce to figures the success of one hundred ministers, lawyers or physicians? Ratings of so-called "competent" judges are so inaccurate that their use is probably doing more harm than good in this field. The minimum requirement is that the test designate those who are clearly successful from those who are actual failures.

Third, the test should have high reliability; that is, any individual, when he takes the test the second time, should obtain approximately the same score which he received the first time.

Fourth, the test scores must not be influenced by technical training and practical experience in an occupation. If they are, to just that extent the test is merely a trade test and not a guidance test. One way of meeting this requirement is to try the test out on young men entering the given occupation and also on young men entering other occupations and note if the test separates the former from the latter *fairly well*. The test should not separate these beginners as well as it does older men, because some of the beginners are undoubtedly entering the wrong profession and will leave sooner or later. As pointed out at the beginning of the paper, the final test is to follow the individual careers of thousands of men. But data from cross-sections of men in various stages of learning an occupation may be accepted provisionally.

The Vocational Interest Test meets these requirements, so far as our data go.

The test blank consists of 263 items appearing in this form:

Actor.....	L	I	D
Architect.....	L	I	D
Army Officer.....	L	I	D
Artist.....	L	I	D
Athletic Director.....	L	I	D

The subject records his attitude toward each item by circling L if he would like to do that type of work, by circling I if he is indifferent to it and by circling D if he would dislike it. In addition to items having reference to occupations, there is a list of school subjects (art, botany, chemistry, civics, etc.), a list of peculiarities of people (witty people, educated people, side-show freaks, nervous people, etc.), a list of games (golf, fishing, etc.), a list of activities (working alone, making a speech before a crowd, organizing a play, etc.), and other lists of magazines, kinds of movies, etc. The blank is really a battery of 263 tests, for in each case the data are handled without reference to the other items until a summary of all is made; moreover, it is quite likely that with each item we obtain a measure of a different combination of elementary interests.

The scoring method may be illustrated as follows: 38 per cent of "men in general" (using the average of our seventeen occupational groups for this purpose—admittedly a far from accurate measure) would like to be actors, whereas 14 per cent of engineers, 38 per cent of life insurance salesmen and 53 per cent of ministers would like to be actors. The difference between "men in general" and these three groups are -24 per cent, 0 per cent and +15 per cent. The percentage differences are replaced by the smaller numbers -6, 0 and +3.² If now Mr. A indicates that he would like to be an actor, he receives a score of -6 toward being an engineer, a score of 0 toward being a life insurance salesman and +3 toward being a minister. The summary of 263 such scores gives his final score. It is necessary to check up the entire 263 items for each occupational rating. This requires about twelve minutes for one occupational rating, or three hours for fifteen ratings.

The usual procedure in scoring studies of this sort has been to correlate the record of an individual with a group average.

²The scoring method is given in detail by K. M. Cowdery, "Measurement of Professional Attitudes," *Journal of Personnel Research*, August, 1926, and by the writer, "An Interest Test for Personnel Managers," *ibid.*, September and October, 1926.

This procedure gives us very negligible returns. On this basis occupational groups are not separated to any particular degree. The assumption in our procedure is that the gross strength of any interest is not significant in vocational selection. The important factor is whether a man has an interest which distinguishes the occupation from other occupations.

After considerable experimentation, a rating scheme was hit upon that is very satisfactory. A rating of A means a man has the interest of a particular occupational group; a rating of C means he does not have such interests; and a rating of B is intermediate. (Statistically, scores above -1 P. E. are rated A; scores between -1 P. E. and the lowest score recorded by anyone belonging to the group are rated B; and scores below this last figure are rated C.) On this basis:

	<i>Per cent rated</i>		
	<i>A</i>	<i>B</i>	<i>C</i>
Personnel men in personnel interest.....	3.5	24.8	71.7
592 non-personnel men in personnel interest	75.0	25.0	0
Bankers in personnel interest.....	0	12.0	88.0
Artists in personnel interest.....	0	0	100

There are two real advantages to this rating scheme. First, it is easily understood by the layman who takes the test. Second, it gives high reliability to the A and C ratings which come to mean "Yes" and "No," and it throws the doubtful cases into the B rating which is defined as intermediate. Instead of using a critical score to divide the Yes and No ratings, we use a broad band and make this band broad enough to cover the doubtful cases. With this procedure, practical use may be made of a test before it is well standardized and as it is improved, the per cent of doubtful B ratings will be decreased and the positive A and C ratings increased.

How well does this Vocational Interest Test meet the requirements that are given above?

The test differentiates not only one given occupation from all others but apparently will differentiate any occupation from any other. It has been tried out on sixteen occupations so far and in each case has differentiated men according

to their occupational group. Apparently men engaged in the same profession have a characteristic set of likes and dislikes which distinguish them from men in other professions.

Typical results are given in the following table. The first row reads: 6 per cent of personnel men are rated A in engineering interest, 33 per cent are rated B; 6 per cent are rated A in C. P. A. interest, 13 per cent rated B; 26 per cent are rated A in lawyer interest, 31 per cent rated B; 0 per cent rated A in minister interest, 10 per cent rated B; etc.

	Personnel		Engineer		C.P.A.		Lawyer		Minister		Life Ins. Salesman		Artist	
	A	B	A	B	A	B	A	B	A	B	A	B	A	B
Personnel.....	-	-	6	33	6	13	26	31	0	10	13	40	0	4
Engineer.....	2	33	-	-	2	21	0	14	2	5	0	26	2	7
C. P. A.....	2	33	2	29	-	-	6	20	0	10	10	53	0	4
Lawyer.....	2	43	5	25	5	23	-	-	8	10	23	43	0	5
Minister.....	0	36	0	10	0	0	6	17	-	-	6	28	0	12
Life Ins. Salesman	2	34	0	29	4	12	10	18	4	8	-	-	0	0
Artist.....	0	0	4	29	0	0	2	9	0	14	0	21	-	-

The above figures amply substantiate the conclusion that occupational groups may be distinguished on the basis of their likes and dislikes. In some cases there is no overlapping at all, in the majority of cases there is considerable overlapping between the fourth quarter of one group and the upper quarter of a second group. It is hoped that the revised blank now being tried out will cut down this overlapping considerably. But we are certain that all of this overlapping cannot be charged against inefficiency in the test procedure. Some of the men who score high in occupations other than their own are undoubtedly qualified to perform such type of work. We have checked up on a considerable number of these cases and found ample evidence of this.

The test differentiates the more successful from the less successful in the two cases where data have been obtained on this point. Thirty-six men from an advertising agency (not included in our criterion group), were scored for advertising interest with the result that 17 rated A, 16 rated B and 3 rated C. All thirty-six were rated as to success in their work by three members of the advertising agency using

2 to mean "Yes," 1 to mean "Not sure" and 0 to mean "No." The results were:

Rated 2.0 by 3 judges. 73% rated A on test, 27% rated B, 0% rated C.
 Rated 1.7 by 3 judges. 71% rated A on test, 29% rated B, 0% rated C.
 Rated 1.3 by 3 judges. 50% rated A on test, 50% rated B, 0% rated C.
 Rated 1.0 by 3 judges. 27% rated A on test, 73% rated B, 0% rated C.
 Rated 0.7 by 3 judges. 0% rated A on test, 67% rated B, 33% rated C.
 Rated 0.3 by 3 judges. 0% rated A on test, 0% rated B, 100% rated C.

Too much reliance must not be put upon such data for the combined ratings of three judges are not always reliable.

Better evidence that the test indicates who are more successful and who are less successful is shown by data from life insurance salesmen. Records of their "paid-for insurance" have been obtained to date from fifty-five of these men. All of the managers of agencies and their assistants rate A in the test. Because in many cases they do not make any effort to sell, but confine their efforts to helping their men, their records have been eliminated. This gives us production records from thirty-eight men who rate A in the test and from twelve men who rate B in the test, as follows:

	Rated A	Rated B
Below \$100,000 a year.....	26%	46%
\$100,000 to \$199,999.....	29	46
\$200,000 to \$299,999.....	21	8
\$300,000 to \$899,999.....	24	0

Such results may be a "flash in the pan." Frankly, the writer had not expected the test would separate superior salesmen from inferior ones as well as this.

Cowdery correlated the odd numbered items of the test against the even numbered and reports reliability coefficients for the test between 0.78 and 0.91, depending upon the occupational group. The original blank has been revised and to date records of 31 ministers have been tabulated who have scored both blanks with an interval of nearly two years intervening. A correlation of 0.73 is obtained from this small group using only the 176 items that are common to both blanks. This is an unusually severe test of reliability involving a long interval of time, considering only two-thirds of the items and using two quite different

blanks. In addition, these records range only between +3 P. E. and -3 P. E. whereas the entire scale of minister interest is between +3 P. E. and -9 P. E.

The data so far presented only establish the fact that this interest test is a satisfactory trade test which measures efficiency and separates men according to their occupations. But is it a guidance test? When given to men prior to entering an occupation, will it foretell their success or failure? If the occupational interests measured by the test are a result of professional training and experience, then these interests cannot be used in vocational guidance. But is this the case?

This question has not been thoroughly answered. But Cowdery has found that the four groups, (a) freshmen and sophomores planning to be engineers, (b) juniors and seniors in engineering school, (c) engineers in graduate work, and (d) engineers with more than five years' practical experience—all score approximately the same on the vocational interest test. The same holds true in the case of medical students and physicians, and of law students and lawyers. "This fact," writes Cowdery, "is established for groups; whether true for individuals remains to be investigated in later research." This result being accepted, we may conclude that what is measured by an interest test is present in men prior to technical training and practical experience. It is not a resultant of vocational choice, but is one factor, at least, in causing that vocational choice.

A considerable number of Stanford students have been rated by the interest test. In many cases the ratings appear correct, that is, they have agreed with our best judgment. But in other cases there has been no way to check the results. Apparently, so far, there has not occurred a single incorrect rating of C, but possibly there have been some incorrect A ratings. At least in some cases students have not warmed up to the thought of adopting occupations in which the test gave an A rating.

We have interest records for fourteen occupations upon the students in the Graduate School of Business. Anyone

familiar with the confidential details would be struck by several remarkable coincidences. On the other hand, the records do not help at all in several cases, possibly the students' interests lie in occupations other than those tested for. It will be interesting to follow up the careers of these men in the light of our data.

With the revised blank, it is hoped that a larger percentage of A and C ratings may be obtained and a smaller percentage of B ratings, thereby increasing the positiveness of test ratings. With the very small available budget for this work it will take about two years to work out scoring systems for twenty occupations. The statistical work necessary in handling only one hundred cases in each of twenty occupations is very great. If the blank turns out to be as good as is expected, records should then be obtained from a large number of young men in order to determine the relationship between the test ratings and their future careers.

Group..... Date.....

Key number.....

VOCATIONAL INTEREST BLANK

ADAPTED BY

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It is possible with a fair degree of accuracy to determine by this test whether one would like certain occupations or not. The test is not one of intelligence or school work. It measures the extent to which one's interests agree or disagree with those of successful men in a given profession.

Your responses will, of course, be held strictly confidential.

Name..... Age..... Sex.....

Occupation (e.g. Carpenter)..... Years of Experience.....

Just what do you do?.....

Name of Firm and Address.....

Address to which correspondence should be sent.....

Highest grade reached in school (e.g. Grammar 6th).....

Did you select your present occupation or was it more or less thrust upon you? Selected it: Yes..... No.....

What occupations, other than your present one, have you at one time or another engaged in?.....

What occupations have you frequently day-dreamed of entering?....

Remarks

PART I. Occupations.—Indicate after each occupation listed below whether you would like that kind of work or not. Disregard considerations of salary, social standing, future advancement, etc. Consider only whether you would like to do what is involved in the occupation.

Draw a circle around L if you like that kind of work.

Draw a circle around I if you are indifferent to that kind of work.

Draw a circle around D if you dislike that kind of work.

Work rapidly. Your first impressions are desired here. Answer all the items. Many of the seemingly trivial and irrelevant items are very useful in diagnosing your real attitude.

Actor (not movie).....	L	I	D	Lawyer, Corporation.....	L	I	D
Advertiser	L	I	D	Librarian	L	I	D
Architect	L	I	D	Life Insurance Salesman.....	L	I	D
Army Officer.....	L	I	D	Locomotive Engineer.....	L	I	D
Artist	L	I	D	Machinist	L	I	D
Astronomer	L	I	D	Magazine Writer.....	L	I	D
Athletic Director.....	L	I	D	Manufacturer	L	I	D
Auctioneer	L	I	D	Marine Engineer.....	L	I	D
Author of novel.....	L	I	D	Mechanical Engineer.....	L	I	D
Author of technical book.....	L	I	D	Mining Superintendent.....	L	I	D
Auto Salesman.....	L	I	D	Musician	L	I	D
Auto Racer.....	L	I	D	Music Teacher.....	L	I	D
Auto Repairman.....	L	I	D	Office Clerk.....	L	I	D
Aviator	L	I	D	Office Manager.....	L	I	D
Bank Teller.....	L	I	D	Orchestra Conductor.....	L	I	D
Bookkeeper	L	I	D	Pharmacist	L	I	D
Building Contractor.....	L	I	D	Photo Engraver.....	L	I	D
Buyer of merchandise.....	L	I	D	Physician	L	I	D
Carpenter	L	I	D	Playground Director.....	L	I	D
Cartoonist	L	I	D	Poet	L	I	D
Cashier in bank.....	L	I	D	Politician	L	I	D
Certified Public Accountant.....	L	I	D	Printer	L	I	D
Chemist	L	I	D	Private Secretary.....	L	I	D
Civil Engineer.....	L	I	D	Railway Conductor.....	L	I	D
Civil Service Employee.....	L	I	D	Rancher	L	I	D
Clergyman	L	I	D	Real Estate Salesman.....	L	I	D
College Professor.....	L	I	D	Reporter, general.....	L	I	D
Consul	L	I	D	Reporter, sporting page.....	L	I	D
Dentist	L	I	D	Retailer	L	I	D
Draftsman	L	I	D	Sales Manager.....	L	I	D
Editor	L	I	D	School Teacher.....	L	I	D
Electrical Engineer.....	L	I	D	Scientific Research Worker.....	L	I	D
Employment Manager.....	L	I	D	Sculptor	L	I	D
Explorer	L	I	D	Secretary, Chamber of Commerce.....	L	I	D
Factory Manager.....	L	I	D	Secret Service Man.....	L	I	D
Factory Worker.....	L	I	D	Ship Officer.....	L	I	D
Farmer	L	I	D	Shop Foreman.....	L	I	D
Floorwalker	L	I	D	Social Worker.....	L	I	D
Florist	L	I	D	Specialty Salesman.....	L	I	D
Foreign Correspondent.....	L	I	D	Statistician	L	I	D
Governor of a State.....	L	I	D	Stock Broker.....	L	I	D
Hotel Keeper or Manager.....	L	I	D	Surgeon	L	I	D
Interior Decorator.....	L	I	D	Toolmaker	L	I	D
Interpreter	L	I	D	Traveling Salesman.....	L	I	D
Inventor	L	I	D	Typist	L	I	D
Jeweler	L	I	D	Undertaker	L	I	D
Judge	L	I	D	Watchmaker	L	I	D
Labor Arbitrator.....	L	I	D	Wholesaler	L	I	D
Laboratory Technician.....	L	I	D	Worker in Y. M. C. A., K. of C., etc.....	L	I	D
Landscape Gardener.....	L	I	D				
Lawyer, Criminal.....	L	I	D				

PART II. *Amusements*.—Indicate in the same manner as in Part I whether you like the following or not. If in doubt, consider your most frequent attitude. *Work rapidly*. Do not think over various possibilities. Record your first impression.

Golf	L	I	D	Auctions	L	I	D
Fishing	L	I	D	Fortune tellers	L	I	D
Hunting	L	I	D	Animal zoos	L	I	D
Tennis	L	I	D	Art galleries	L	I	D
Driving an automobile	L	I	D	Museums	L	I	D
Taking long walks	L	I	D	Vaudeville	L	I	D
Boxing	L	I	D	Musical comedy	L	I	D
Checkers	L	I	D	Symphony concerts	L	I	D
Chess	L	I	D	Pet canaries	L	I	D
Poker	L	I	D	Pet monkeys	L	I	D
Bridge	L	I	D	Snakes	L	I	D
Solitaire	L	I	D	Sporting pages	L	I	D
Billiards	L	I	D	Poetry	L	I	D
Observing birds (nature study)	L	I	D	Detective stories	L	I	D
Solving mechanical puzzles	L	I	D	"Literary Digest"	L	I	D
Playing a musical instrument	L	I	D	"Life"	L	I	D
Performing sleight-of-hand tricks	L	I	D	"New Republic"	L	I	D
Collecting postage stamps	L	I	D	"System"	L	I	D
Drilling in a company	L	I	D	"National Geographic Magazine"	L	I	D
Chopping wood	L	I	D	"American Magazine"	L	I	D
Amusement parks	L	I	D	"Popular Mechanics"	L	I	D
Picnics	L	I	D	"Atlantic Monthly"	L	I	D
Excursions	L	I	D	"Arts and Crafts"	L	I	D
Smokers	L	I	D	Cowboy movies	L	I	D
"Rough house" initiations	L	I	D	Educational movies	L	I	D
Conventions	L	I	D	Travel movies	L	I	D
Full-dress affairs	L	I	D	Social problem movies	L	I	D

PART III. *School Subjects*.—Indicate as in Part II your interest when in school.

Algebra	L	I	D	Mathematics	L	I	D
Agriculture	L	I	D	Manual Training	L	I	D
Arithmetic	L	I	D	Mechanical Drawing	L	I	D
Art	L	I	D	Military Drill	L	I	D
Bible Study	L	I	D	Music	L	I	D
Bookkeeping	L	I	D	Nature Study	L	I	D
Botany	L	I	D	Penmanship	L	I	D
Calculus	L	I	D	Philosophy	L	I	D
Chemistry	L	I	D	Physical Training	L	I	D
Civics	L	I	D	Physics	L	I	D
Dramatics	L	I	D	Psychology	L	I	D
Economics	L	I	D	Physiology	L	I	D
English Composition	L	I	D	Public Speaking	L	I	D
Geography	L	I	D	Shop Work	L	I	D
Geology	L	I	D	Shorthand	L	I	D
Geometry	L	I	D	Sociology	L	I	D
History	L	I	D	Spelling	L	I	D
Languages, ancient	L	I	D	Typewriting	L	I	D
Languages, modern	L	I	D	Zoology	L	I	D
Literature	L	I	D				

PART IV. *Activities.*—Indicate your interests as in Part II. *Work rapidly.*

Repairing a clock.....	L	I	D	Writing personal letters.....	L	I	D
Making a radio set.....	L	I	D	Writing reports.....	L	I	D
Adjusting a carburetor.....	L	I	D	Entertaining others.....	L	I	D
Repairing electrical wiring.....	L	I	D	Bargaining ("swapping").....	L	I	D
Cabinetmaking.....	L	I	D	Looking at shop windows.....	L	I	D
Operating machinery.....	L	I	D	Buying merchandise for a store	L	I	D
Handling horses.....	L	I	D	Displaying merchandise in a			
Giving "first aid" assistance...	L	I	D	store.....	L	I	D
Raising flowers and vegetables...	L	I	D	Expressing judgments publicly			
Decorating a room with flowers	L	I	D	regardless of criticism.....	L	I	D
Arguments.....	L	I	D	Being pitted against another as			
Interviewing men for a job.....	L	I	D	in a political or athletic race	L	I	D
Interviewing prospects in selling	L	I	D	Being left to yourself.....	L	I	D
Interviewing clients.....	L	I	D	Methodical work.....	L	I	D
Making a speech.....	L	I	D	Regular hours for work.....	L	I	D
Organizing a play.....	L	I	D	Continually changing activities...	L	I	D
Opening a conversation with a				Continuing at same work until			
stranger.....	L	I	D	finished.....	L	I	D
Teaching children.....	L	I	D	Studying latest hobby, e.g., Ein-			
Teaching adults.....	L	I	D	stein theory, Freud, etc.....	L	I	D
Calling friends by nicknames...	L	I	D	Developing business systems...	L	I	D
Being called by a nickname.....	L	I	D	Saving money.....	L	I	D
Meeting and directing people...	L	I	D	Contributing to charities.....	L	I	D
Taking responsibility.....	L	I	D	Raising money for a charity...	L	I	D
Meeting new situations.....	L	I	D	Living in the city.....	L	I	D
Adjusting difficulties of others	L	I	D	Climbing along edge of precipi-			
Drilling soldiers.....	L	I	D	ce.....	L	I	D
Pursuing bandits in sheriff's				Looking at a collection of rare			
posse.....	L	I	D	laces.....	L	I	D
Doing research work.....	L	I	D	Looking at a collection of an-			
Acting as yell-leader.....	L	I	D	tique furniture.....	L	I	D

PART V. *Peculiarities of People.*—Record your first impression. Do not think of various possibilities or of exceptional cases. "Let yourself go" and record the feeling that comes to mind as you read the item.

Progressive people.....	L	I	D	Very old people.....	L	I	D
Conservative people.....	L	I	D	Cripples.....	L	I	D
Energetic people.....	L	I	D	Side-show freaks.....	L	I	D
Absent-minded people.....	L	I	D	People with gold teeth.....	L	I	D
People who borrow things.....	L	I	D	People with protruding jaws...	L	I	D
Quick-tempered people.....	L	I	D	People with hooked noses.....	L	I	D
Optimists.....	L	I	D	Blind people.....	L	I	D
Feminists.....	L	I	D	Deaf mutes.....	L	I	D
People who are natural leaders	L	I	D	Self-conscious people.....	L	I	D
People who assume leadership...	L	I	D	People who always agree with			
People easily led.....	L	I	D	you.....	L	I	D
People who have made fortunes				People who talk very loudly...	L	I	D
in business.....	L	I	D	People who talk very slowly...	L	I	D
Emotional people.....	L	I	D	People who talk about them-			
Thrifty people.....	L	I	D	selves.....	L	I	D
Spendthrifts.....	L	I	D	Methodical people.....	L	I	D
Talkative people.....	L	I	D	Fashionably dressed people...	L	I	D
Religious people.....	L	I	D	Carelessly dressed people.....	L	I	D
Irreligious people.....	L	I	D	People who do not believe in			
People who have done you				evolution.....	L	I	D
favours.....	L	I	D	Socialists.....	L	I	D
People who get rattled easily...	L	I	D	Bolsheviks.....	L	I	D
Gruff men.....	L	I	D	Independents in politics.....	L	I	D
Witty people.....	L	I	D	Tectotalers.....	L	I	D
Foreigners.....	L	I	D	Men who chew tobacco.....	L	I	D
Negroes.....	L	I	D	Women cleverer than you are...	L	I	D
Cautious people.....	L	I	D	Men who use perfume.....	L	I	D
Sick people.....	L	I	D	People who chew gum.....	L	I	D
Nervous people.....	L	I	D	Athletic men.....	L	I	D

PART VII. *Comparison of Interest between Two Items.*—Indicate your choice of the following pairs by checking in the first space if you prefer the item to the left, in the second space if you like both equally well, and in the third space if you prefer the item to the right. Assume other things are equal except the two items to be compared.

Work rapidly.

Street-car motorman.....	()	()	()	Street-car conductor
Policeman	()	()	()	Fireman (fights fire)
Chauffeur	()	()	()	Chef
Head waiter.....	()	()	()	Lighthouse tender
House to house canvassing....	()	()	()	Retail selling
House to house canvassing....	()	()	()	Gardening
Repair auto.....	()	()	()	Drive auto
Develop plans.....	()	()	()	Execute plans
Do a job yourself.....	()	()	()	Delegate job to another
Persuade others.....	()	()	()	Order others
Deal with things.....	()	()	()	Deal with people
Plan for immediate future.....	()	()	()	Plan for five years ahead
Activity which produces tangible returns	()	()	()	Activity which is enjoyed for its own sake
Taking a chance.....	()	()	()	Playing safe
Definite salary.....	()	()	()	Commission on what is done
Work for yourself.....	()	()	()	Carry out general program of superior who is respected
Work which interests you with modest income.....	()	()	()	Work which does not interest you with large income
Work in a large corporation with little chance of becoming president until age of 55.....	()	()	()	Work for self in small business
Selling article, quoted 10% below competitor.....	()	()	()	Selling article, quoted 10% above competitor
Small pay, large opportunities to learn during next 5 years....	()	()	()	Good pay, little opportunity to learn during next 5 years
Work involving few details....	()	()	()	Work involving many details
Outside work.....	()	()	()	Inside work
Change from place to place....	()	()	()	Work in one location
Great variety of work.....	()	()	()	Similarity in work
Physical activity.....	()	()	()	Mental activity
Emphasis upon quality of work.	()	()	()	Emphasis upon quantity of work
Technical responsibility (head of a department of 25 people engaged in technical, research work)	()	()	()	Supervisory responsibility (head of a department of 800 people engaged in typical business operation)
Present a report in writing....	()	()	()	Present a report verbally
Listening to a story.....	()	()	()	Telling a story
Playing baseball.....	()	()	()	Watching baseball
Amusement where there is a crowd	()	()	()	Amusement alone or with one or two others
Nights spent at home.....	()	()	()	Nights away from home
Reading a book.....	()	()	()	Going to movies
Belonging to many societies....	()	()	()	Belonging to few societies
Few intimate friends.....	()	()	()	Many acquaintances
Many women friends.....	()	()	()	Few women friends
Fat men.....	()	()	()	Thin men
Tall men.....	()	()	()	Short men
Jealous people.....	()	()	()	Conceited people
Jealous people.....	()	()	()	Spendthrifts
People who talk very low.....	()	()	()	People who talk very loudly
People who talk very fast.....	()	()	()	People who talk very slowly

PART VIII. *Rating of Present Abilities and Characteristics.*—Indicate below what kind of a person you are right now and what you have done. Check in the first column ("Yes") if the item really describes you, in the third column ("No") if the item does not describe you, and in the second column (?) if you are not sure. (Be frank in pointing out your weak points, for selection of a vocation must be made in terms of them as well as your strong points.)

	YES	?	NO
Usually start activities of my group.....	()	()	()
Usually drive myself steadily (do not work by fits and starts).....	()	()	()
Win friends easily.....	()	()	()
Usually get other people to do what I want done.....	()	()	()
Usually liven up the group on a dull day.....	()	()	()
Am quite sure of myself.....	()	()	()
Accept just criticism without getting sore.....	()	()	()
Have mechanical ingenuity (inventiveness).....	()	()	()
Have more than my share of novel ideas.....	()	()	()
Can carry out plans assigned by other people.....	()	()	()
Can discriminate between more or less important matters.....	()	()	()
Am inclined to keep silent (reticent) in confidential and semi-confidential affairs.....	()	()	()
Am always on time with my work.....	()	()	()
Remember faces, names, and incidents better than the average person	()	()	()
Can correct others without giving offense.....	()	()	()
Able to meet emergencies quickly and effectively.....	()	()	()
Get "rattled" easily.....	()	()	()
Can write a concise, well-organized report.....	()	()	()
Have good judgment in appraising values.....	()	()	()
Plan my work in detail.....	()	()	()
Follow up subordinates effectively.....	()	()	()
Put drive into the organization.....	()	()	()
Stimulate the ambition of my associates.....	()	()	()
Show firmness without being easy.....	()	()	()
Win confidence and loyalty.....	()	()	()
Smooth out tangles and disagreements between people.....	()	()	()
Am approachable.....	()	()	()
Discuss my ideals with others.....	()	()	()
Worry considerably about mistakes.... ()	Worry very little.... ()	Do not worry..... ()	
Feelings easily hurt. ()	Feelings hurt some-times..... ()	Feelings rarely hurt. ()	
Usually ignore feelings of others.... ()	Consider them some-times..... ()	Carefully consider them..... ()	
Lend money to acquaintances..... ()	Lend only to certain people..... ()	Rarely loan money.. ()	
Rebel inwardly at orders from another, obey when necessary..... ()	Carry out instructions with little or no feeling..... ()	Enter into situation and enthusiastically carry out program. ()	
When caught in a mistake usually make excuses..... ()	Seldom make excuses ()	Practically never make excuses..... ()	
Best-liked friends are superior to me in ability..... ()	Equal in ability.... ()	Inferior in ability... ()	
Handle complaints without getting irritated..... ()	Become annoyed at times..... ()	Lose my temper at times..... ()	
Borrow frequently (for personal use). ()	Borrow occasionally.. ()	Practically never borrow..... ()	
Tell jokes well.... ()	Seldom tell jokes.... ()	Practically never tell jokes..... ()	
My advice sought by many..... ()	Sought by few..... ()	Practically never asked..... ()	
Frequently make wagers..... ()	Occasionally make wagers..... ()	Never make wagers.. ()	

EDWARD K. STRONG, JR.

Selection of Freshmen at Northwestern University College Of Liberal Arts

IT IS required of applicants for admission to the freshman class of the College of Liberal Arts of Northwestern University that they present fifteen units of high school work from a secondary school of acceptable standing. These credits must include three units of English, one unit of Algebra, one of Plane Geometry, two of foreign language, and five additional units from a list of subjects including those just mentioned and the social and exact sciences. The three remaining units may be in any subjects commonly taught in high school except applied music and physical education. In addition to the requirements concerning subjects, the applicant, if he is to be admitted without examinations, must be certified to be in the upper half of his graduating class. Practically, this is almost equivalent to saying that he must have an average above the average of his class. A third general requirement which is implied is that the applicant be of good moral character and at least of fairly stable personality.

There are some who do not meet all these requirements who may still be considered as applicants. The first requirement is invariable. No applicant may be admitted who lacks any of the specified high school units. The rejection also of persons of questionable moral character or very unstable personality is, to the extent that our information permits, without exception. Conditions in high school subjects, since the number of years of language for admission has been lowered, are no longer allowed.

But sometimes applicants are admitted who are not reported as ranking in the upper half of the graduating class of an accredited school. Those who do not graduate but have the necessary units of credit, those from the lower half of

the class, and those from unaccredited schools may be admitted after passing entrance examinations. The entrance examinations consist of standardized tests in English, a test in one year of Algebra, an essay examination in two years of the high school language presented for entrance, and a general psychological examination—a mental alertness test.

The method of collecting information concerning applicants is almost entirely through the use of printed forms. The form sent the high school principal asks the usual questions about the school such as the passing mark, the length of the recitation periods, the number of weeks in a school year, etc. It also asks for the record of the student including not only the subjects taken and the grades earned but also the subjects failed, his exact ranking in the class, the number of students in the class, the extent to which the student has been self-supporting, his participation in school activities, and similar data.

The prospective student makes formal application by filling out what is in reality a personal questionnaire. In this form we ask for the names of the schools attended and the years spent at each. Space is provided for information concerning the birthplace, vocation, and education of parents. Concerning himself, he is asked to state what kind of course he hopes to pursue in college, what vocation he plans to enter, the amount of time he may spend in earning money to pay college expenses, the amount of time he will spend in transportation, and so forth.

A form for a physician's statement is included in the application blanks. This is to be filled out by the family physician and sent directly to the university. The questions asked have to do with general health and other items in which our own university medical staff is interested.

Three copies of another blank are sent to the applicant. These he is to have filled out (1) by a high school teacher or principal, (2) by a parent, and (3) by a friend, a graduate of Northwestern, if possible. This form is designed to get information of an unusual kind about a very small percentage of applicants. The questions are very general and the

answers in most cases are of a stereotyped nature. We ask for an estimate of the probable scholastic success of the applicant in college, the ways in which the prospect has demonstrated his seriousness of purpose, any reason why his admission to college should be postponed or denied, what benefit he will probably derive from college training, and what personality traits should be developed, eliminated, or corrected.

It is on the basis of the information obtained by these blanks, and usually by this alone, that we accept the applicant, reject him, or postpone decision until the results of the entrance examinations are available.

The passing mark on the three objectively scored entrance tests is the score which will separate the upper three-fourths from the lower fourth of all the students admitted to the freshman class. These scores have been determined with students of earlier years. The essay examination of two years of language is marked by a professor of foreign language in the college as either passed or failed. Just what constitutes passing in the language test is determined by the person doing the correcting. (Later we expect to use objective tests in language.)

Applicants who pass all four tests, if they are acceptable except for high school ranking, are admitted. Those who do not pass all are subject to rejection. But not even all of these are refused admission. It is with just these cases, doubtful even after examinations, that we have an opportunity to use our tabulated experience of other years. We have collected data on the success of different types of students from the classes of the last five years. Some of this material has been collected and observed for a sufficiently long time to give us some confidence in using the results as a determining criterion in borderline cases. In other cases practices are tentative and subject to modification. The passing mark of the three objective tests—that is, a score sufficiently high to place one in the upper three-fourths of the entering group—was arrived at by examining the relation of college work and the scores of each of the several tests

during previous years. We have yet to see just how effective this requirement is when applied in exactly the form in which it is now used. However, this information will be available for the next group of applicants.

The one bit of information available before the applicant is accepted which is most valuable in indicating probable success in college is his high school record. The standing of those from high school graduating classes of 100 or more is especially valuable in indicating the quality of work which will be done in college. For some representative groups of students from such high school classes, we have obtained as an indication of the relation between high school ranking and college ranking during the first semester coefficients of correlation above 0.70. The rank of students who come from the smaller high schools is not so valuable in predicting success in college. But the standing even of these is somewhat more valuable than the scores on intelligence tests alone. The results of the general intelligence examination are next best in predicting scholastic success in college. But correlations between the scores made on these tests and the quality of college work have always fallen short of 0.60. The high school standing and the intelligence tests combined, however, are much more valuable than either alone. The placement tests in English and Algebra give a positive correlation with general scholarship but add very little to the predictive value of the high school ranking combined with intelligence test scores. These placement tests are really given for other purposes and consequently do not have a large place in the actual selection of students.

We have been interested in comparing the quality of work done in Liberal Arts by students from a number of the neighboring high schools. We find that there are some noticeable differences in the average quality of work done by groups when divided in this way. If additional groupings are made including in one group all who have come from military academies, another group the students from Catholic schools, and still another from the remaining private schools, we find still greater differences. The students who

come to us from the private schools get somewhat lower college grades than do those who come from the large high schools of this area.

The number of high schools which the applicant has attended may indicate something as to his probable success in college. At any rate, it seems that students who have attended three or more high schools do poorer work than other factors would predict.

When students are divided at entrance according to age into three groups, those under seventeen, those seventeen but under twenty, and those of twenty years or over, it is found that the youngest group does on the average the best work. Those of intermediate age do work somewhat inferior, and those who are in the oldest group do, as a whole, the poorest work. Of course, there are all degrees of success in each group, but the averages of the groups have a negative relation with age.

The amount of outside work may be an important cause of failure. Students doing an excessive amount of work fail or, at best, get grades somewhat lower than otherwise would be expected. The amount of work which will almost certainly cause a student's grades to suffer has been found to be between twenty-five and thirty hours a week. Since many of our students do their work for compensation in different parts of the city of Chicago or live 15 or 20 miles from the campus, the amount of time spent at work can hardly be considered without considering the time spent in transportation. Some students even spend one-sixth of their week in going back and forth. Twenty-five hours a week is not an unheard-of amount of commuting. These excessive amounts of time spent in transportation become handicaps in themselves when unaccompanied by outside work for compensation.

Some data have been compiled concerning family background. The factors considered were such as the birthplace of parents (whether native or foreign born), the education of parents, and the education of brothers and sisters. Variations in these factors seemed to have no consistent and

marked relation to the scholastic success of the students. Apparently those who come to this college are not classified as to scholastic ability by such factors as the place of birth of the parents or by their education or by the education of the brothers and sisters.

The above types of information concerning our students influence very decidedly our disposition of those borderline applicants who, subject to examinations, have failed to pass one, two, or even three of the four tests. If such applicants stand relatively high in the lower half or rank high in their class from an unaccredited high school, they are more likely to be accepted. If the applicant passes with a good score in the mental alertness test and has failed one of the placement tests or the language test, he is more likely to be admitted than one who has failed the mental alertness test and passed the others. The mental test has much more predictive value. However, an applicant who has attended three or four schools, especially if he has gone from one school to another while his parents kept their residence in one community, is not likely to be admitted if other factors do not rather definitely predict success. Because we have found some difference in the type of work done here by students from different high schools, we sometimes, when other factors for and against seem to balance one another, show some favor to those who come from a high school which has heretofore sent us a large proportion of good students. Although the amount of outside work and transportation do have a bearing on the success of students, we do not use these factors as a basis for refusing admission, but rather use them as a reason for restricting the number of hours for which the student may register.

Birthplace of parents is scarcely considered in admitting students. We do, however, attempt to learn the ability of the student to use our language if he himself happens to be of foreign birth.

Below the borderline cases are certain classes which we never accept. Those applicants who do not meet the college subject requirements may not be admitted. They may not

even be admitted on probation or on condition that they make up the deficiency. There is a rule which provides for the admission of special students, but this is not interpreted as a means of admitting those who cannot be admitted because of deficiencies. Those students who fail all of their tests and who are also in the lower half of their class are uniformly denied admittance. On a very few occasions, students who fail three tests but do very well on the fourth and who have favorable records otherwise are admitted. But as a general rule a student is rejected if he fails three tests. Although many of those who fail two tests are denied entrance, the admission of applicants who fail only one or two tests depends very much on the other factors which have been discussed.

The general scheme of admitting students who seem to be of good character then makes decision for certain very favorable and other very unfavorable applicants a matter of applying definite rules which have been carefully worked out. But the real problems of selecting new students lie in the task of evaluating the character traits, other than intellectual ability, of all applicants and in differentiating among those of doubtful capacity as college students; in selecting the best of what we have called borderline cases.

E. L. CLARK.

Student Health Program at Dartmouth

THERE is no point at which colleges and universities have a more definite responsibility today than in the matter of safeguarding student health and in adopting preventive and corrective measures for caring for the young men and women within them. There can be no set formula of operation by which this responsibility may be said to be best discharged. Conditions in no two colleges are the same, and resources for carrying on this type of work differ in degree of completeness in every college and university in the land. The college that is so located that it can draw on the facilities of the large city does not have to concern itself with problems of food and water supply, sanitation, hospital and medical services and other measures of protection and prevention to anything like the degree that is essential in the country college. On the other hand, the city college may be faced with very real problems of providing space for recreation and health-giving exercise and of fitting the college schedule into the complex program of many students who are not residents at the institution. The isolation from outside affairs and the freedom of space which the average country college enjoys make these problems much less difficult to solve.

One common denominator present in all colleges and universities is the acknowledged responsibility of providing for the mental and physical health of the student: first, by using all precautions to safeguard against the rise of illnesses and diseases which can be prevented; second, by adopting some plan of physical education and training which will make the students stronger in body; and third, by having available specialists who will be able to care for diseases not only of the body but also of the mind. The purpose of this article is to describe in some detail the manner in which one college

has been trying to discharge this responsibility. The plan outlined is not given as one of proved worth and as one to be followed blindly by other institutions. It is, rather, the story of a succession of experiments, endorsed by scientific knowledge, and utilized with intelligent supervision by Dartmouth College during recent years. It is to be hoped that, as time goes on, progressive changes will be made, solutions will be found for new problems and improved methods will result from advances made in science.

Dartmouth is a liberal arts college for men, located in Hanover, a small New Hampshire town which lies about 150 miles north of Boston. There being no manufacturing interests and no business other than that done by the tradesmen and retailers, the college has always been forced to assume a paternalistic attitude toward the town. Responsibilities which ordinarily would be considered municipal have, by the very nature of things, become responsibilities of the college. Toward the close of the nineteenth century the sanitary conditions in Hanover were deplorable. It was essential that the college take steps to remedy the situation, and in 1893, largely through the efforts and inspiration of Dr. William J. Tucker, at that time president of the college, a complete system of water-works was installed and an adequate sewer system was laid. In 1903 the entire watershed which fed the reservoir was purchased in order to insure the purity of the water supply. Under the direction of Dr. Howard N. Kingsford, medical director and health officer of the college, a system of careful supervision and inspection was instituted in order to safeguard against the outbreak of contagious and infectious disease. All college buildings were given periodical examination, cultures were taken in all classrooms and dormitories, all restaurants and student boarding houses were placed under inspection, and all farms furnishing milk to the town were examined and a rigid standard was set in order to guarantee that high grade milk would be furnished at all times. As time went on the medical director was able to get more and more cooperation from others until today the college janitors, the townspeople, the

farmers, and others who are in a position to help, realize the importance of taking these precautions and are willing to assist to a large degree in making certain that no unwholesome conditions exist. That this work of the medical director has been successful is best testified to by the following facts: there has never been a case of typhoid fever develop in Hanover since 1896; no deaths have occurred from contagious diseases since 1895; and, with the single exception of the outbreak of influenza during 1918, there has been no serious epidemic in the town for an even longer period.

The college is fortunate in having located in the town the Mary Hitchcock Memorial Hospital, erected in 1893 and since that time widely known as one of the finest cottage hospitals in the country. The hospital is under the management of physicians and surgeons who are connected with the Dartmouth Medical School, and students entering the hospital are placed under the care of the hospital staff. In order to make certain that all students who are ill are receiving proper medical care, the janitors in the dormitories report all cases of illness to the medical director twice a day. He then investigates and sees to it that the case is taken care of, that a doctor has been called, and that precautions have been taken if the illness is contagious. Owing to the natural disposition of most students to keep going even though they may be ill and in need of medical care, the medical director must be constantly on the watch for cases which need his attention. He is responsible at all times when the health of any student is in question, and in order that he may discharge this responsibility without hindrance his authority is considered as final by all concerned.

In the College Catalogue, under the heading "Physical Education," the following statement of purpose is made: "Dartmouth College has stood for the physical development of the student and for the inculcating of a love of exercise which will be carried through life. This department places physical education on a par with other subjects and does not regard it as merely a training of the body, but as an educational factor that will contribute to the health of both mind

and body." Thirteen members in this department are devoting their entire time toward the complete realization of this purpose. Dr. John Bowler, professor of physical education, gives each man entering the college a complete physical examination and determines whether it is advisable for the individual to take part in the normal recreational and athletic program. If the examination fails to bring out any weaknesses and defects which need special attention, the man is free to compete for one of the organized athletic teams or to take part in recreational athletics. He must do one or the other, and for the remainder of his freshman and sophomore years he must take part in some form of athletics at least three times a week. Just as he will receive expert coaching if he decides to compete for a team, so he will be under competent direction if he elects the less formal recreational work.

If the physical examination shows that the individual needs special treatment in order to overcome some serious physical disorder, he will be placed in a separate section and will be given a course of treatment designed to bring him up to normal health, to remove whatever defects he may have, and to get him in shape so that he may join the recreational group in whichever sport he may elect.

In addition to the two years of recreational athletics that the student must complete satisfactorily, he must also take a one-hour course in Physical Education for one semester and pass a satisfactory examination in the course in order to qualify for a degree. This course is designed to cover knowledge of prevention of disease, gross human anatomy, physiology of muscular exercise, personal hygiene and dietetics.

Although the restrictions governing the work of the department of Physical Education are necessarily severe, in order to assure that every student takes care of his health and gets sufficient exercise, the administration of the department organization has been wisely handled. The feeling of compulsion has been removed, for the most part, and the students enter into the recreational work with enthusiasm.

No less important than the work of the physical director,

although fortunately less widely needed by the students, is the work of the college psychiatrist, Dr. Milton Harrington. For many years the problem has been facing all college officers of how to take care of the mentally unwell. College deans, personnel officers, and members of the teaching staff felt the need of having a specialist available to whom men could be sent who needed advice and help to overcome nervous strains, inhibitions, and complexes. It was recognized at the outset that this was a more delicate problem than that of physical education and training. First of all, it was not certain that students who needed help would take kindly to the suggestion that they consult a specialist. It seemed necessary to make this a purely voluntary proposition, and the search was made for a man who would have both the scientific knowledge and the personal charm to draw these sick boys to him. Such a man was found in Dr. Bancroft, who came to Dartmouth in 1921 and who, by cooperating splendidly with the college officers and the faculty, made his influence so fine and so helpful that at the time of his death in 1924 men were coming to him for consultation about all kinds of problems with which, from campus talk, they thought he could help them.

Since 1924 Dr. Harrington has been carrying on the work in the same fine spirit and in the same quiet and unheralded manner has been reaching a majority of the students who need help. In some instances this need is not great. Often it is just a case of offering advice which will help a man in outlining his program of work so that he can find time to do the many things which are a part of his schedule. At other times it is a question of breaking down the examination bogey and of persuading a man that a certain course in his program is not impossible for him to pass. In some few instances, however, more serious mental disorders are present, and within the past two years Dr. Harrington has been able to detect these cases and to see that they received proper treatment. Had this not been done promptly, serious consequences might have resulted.

Against the many arguments which have been raised in

opposition to the work of the psychiatrist in the college can be placed scores of examples where the psychiatrist at Dartmouth has helped students to make more successful their college careers and perhaps their whole lives. For many he has broken down inhibitions which might have caused them to feel inferior, he has raised many from the depths of despondency to the realms of hope and courage, and has given to them the desire to live more complete and more positive lives.

Testimony from many sources is convincing in appraising the value of this mental hygiene work. Men who have come under the influence of the psychiatrist are loud in their praise of the help which he has given them. Members of the faculty testify frequently to the change which has come over men who have found this help. For the deans who formerly met this type of man and were lost in their attempts to be of help, it has proved a godsend to have a man on the job, ready to give this treatment which they felt was necessary but which they were powerless to supply.

During the past three years the college has been paying particular attention to the students who are underweight, experience having proved that such men have neither the nervous nor the physical reserve to withstand excessive strains, even though they may appear to be in the best of health. Dr. W. R. P. Emerson, of Boston, an expert on problems of nutrition, has for many years been engaged in this study and has worked out a method of treatment which is now in operation at Dartmouth for its third successive year.

The fundamental principle upon which the nutrition work is based is that, for a person of any given height and age, there is an optimum weight of from 5 to 10 per cent above the average weight for such a class. Anybody who is 7 per cent or more below the average for his height and age is not only at a disadvantage because of his inability to bear up under the physical and mental strain of college work and extra-curricular activities, but is also more susceptible to tuberculosis, diabetes, and circulatory disorders than is the

man in the average or optimum group. As this phase of the health program is not widely known, perhaps it may be permissible for me to outline briefly the work of Dr. Emerson's office.

During the spring of the year, when men are applying for admission to college, they are requested to fill out their height, weight, and age on their application blanks. A check is made, and all men who are 10 per cent or more underweight are notified and are given brief instructions as to diet and health habits which will help them to increase their weight before entering in the fall. At the time of matriculation the entire class is weighed and measured and the men who are 7 per cent or more underweight are put into a special class. They are excused from work in recreational activities and enter upon a program which is designed to make them gain. First of all a physical examination is given to locate, if possible, any physical defects which might block progress in gaining weight. These few cases having been taken care of, the work settles down to a question of weekly calls at Dr. Emerson's office, where they are weighed and given instructions for the coming week. In general, this program consists of following a few simple rules such as regular hours for meals and sleep, rest before meals, and lunches before going to bed at night. Response to this treatment is most encouraging. Of the sixty-five freshmen in the course during the first semester of 1926-1927, four were able to reach the average weight for height after the fourteen-week period. Sixty-one of the sixty-five gained on the average of 5.65 pounds each, and only four either failed to gain or lost weight. The men who have not yet reached average will continue on with the course until they do.

In addition to the work with freshmen, Dr. Emerson's office also handles groups of upper classmen, and at the present time a few members of the faculty are taking advantage of this opportunity to improve their health and are regular attendants at the nutrition classes.

Although in general the attempt has been made to regulate the college program so that there will be no force in

operation that in any way endangers the health and welfare of the students, there are some conditions which seem to warrant attention. The strain of prolonged examination periods and elaborate social functions, which take place occasionally during the college year, tax the strength of all who participate, and in time to come regulations may be necessary in order to assure that no undesirable and unwise condition exists. It is the responsibility of all college officers to keep this important question always in the foreground and to consider from time to time whether any progressive action can be taken either to remedy harmful conditions which exist or to institute new preventive measures which will strengthen the work being done.

The medical profession is forever on the watch to seek out new truths and new methods which, if applied, will make the health programs of the colleges more effective. It is the responsibility of the colleges to utilize these findings to the maximum and to recognize the health program as one of primary concern.

ROBERT C. STRONG.

Extra-Curriculum or Extra-Curricular?

THE USE of these expressions has grown to be quite common in educational literature, particularly in connection with the word "activities." The old term, "student activities," has faded away. A recent dean's report has a paragraph headed "Extra-classroom Activities." Under this head he discusses chiefly the extra-school activities of the teacher. The rapidity with which the phrase "extra-curricular activities" has come into vogue is most interesting.

The prefix "extra" has long been used before well-known adjectives to make a new adjective, thus giving us a pair with contrasting meanings. Thus we have "mural" and "extramural," "territorial" and "extraterritorial," "judicial" and "extrajudicial."

In all of these cases there was in existence a well-defined adjective to which the prefix was attached. On the other hand, there never has been in common use such an adjective as "curricular." Most dictionaries ignore the existence of this word. Its meaning, if recognized at all, has been "pertaining to a race track or running course," and it is only in recent dictionaries that the word is recognized as a legitimate adjective related to "curriculum," meaning a course of study. It would seem actually that this use of "curricular" was subsequent to the use of the compound "extra-curricular." When a recent writer in a fugitive article speaks of "curricular progress in the high school," one is disposed to inquire whether that progress is in the curriculum or on the athletic field.

The rapid emergence of the word "extra-curricular" seems to be explained by a feeling that in such compounds

¹Besides the following comments on terminology from Chancellor Kirkland, the Council has received several others too late for inclusion in this issue of THE EDUCATIONAL RECORD. Further discussion of the terminology problems raised in the January issue will be helpful to the Committee on Standards.—EDITOR.

we must show a definite adjectival ending. We have, therefore, created without necessity a very awkward word "curricular" which we are proceeding to use in very awkward combinations.

On the other hand, the argument for "extra-curriculum" is based on sound and satisfactory reasoning. It is well known that the English language permits nouns in form to be used freely as adjectives without the adoption of any new ending. Nothing is more common than such phrases as "college life," "school problems," "student failures," "faculty changes," "curriculum studies," etc. In many cases the use of the noun as an adjective gives a peculiar meaning which is better understood than would be the similar phrase using a well established adjectival form. Thus "college life" is a clearer phrase than "collegiate life," and "school problems" is better understood than "scholastic problems." In similar manner the college world would easily understand the phrase "curriculum changes," but there never has been a time when it would have accepted the phrase "curricular changes."

The validity of this use of the word "curriculum," which cannot be questioned, is our strongest argument for the word "extracurriculum" as a contrasting adjective. The use of the plural "extracurricula" is merely an indication of the uncertainty with which we have floundered about, trying to make a selection from three words without a clear analysis of the operation. From all that has been said the weight of the argument favors "extra-curriculum." No doubt we shall continue to meet the other expression "extra-curricular," and it may be assumed that there will be a growing tendency to use the adjective "curricular." The feelings of the purist will be hurt in this process, but the development of words and phrases in the English language has generally proceeded without much consideration for the feelings of either grammarians or purists. Nevertheless, it is to be hoped that college catalogs and college literature will maintain a preference for a form that can be strongly defended.

J. H. KIRKLAND.

Accredited Higher Institutions

IN 1924 the American Council on Education approved and published two reports of its Committee on Standards, recommending uniform standards as criteria for accrediting colleges, teacher-training institutions and junior colleges. Since then the various regional associations have worked continuously on this problem, have revised their respective lists each year and are gradually working toward uniform standards. Therefore, the list of accredited higher institutions published by the Council in 1925 is incomplete.

The following list is merely a compilation as of April 1, 1927, of the lists of the established accrediting agencies; namely, the Association of American Universities, the Association of Colleges and Preparatory Schools of the Middle States and Maryland, the Association of Colleges and Secondary Schools of the Southern States, the North Central Association of Colleges and Secondary Schools and the Northwest Association of Secondary and Higher Schools.

It will be noted that the four regional associations of colleges and secondary schools just mentioned cover among them the entire United States with the exception of New England and the far southwest. Hence institutions in those two regions would not appear in the following list unless they appear on the list of the Association of American Universities, which is a national list.

The American Council on Education has printed as a separate pamphlet its recommendations concerning standards for accrediting higher institutions. Copies of this pamphlet and of the accompanying list will be sent without charge on request addressed to the office of the Council.

ALABAMA

<i>Name of Institution</i>	<i>Location</i>
Alabama College for Women	Montevallo
Alabama Polytechnic Institute	Auburn
Birmingham-Southern College	Birmingham
Howard College	Birmingham

<i>Name of Institution</i>	<i>Location</i>
Judson College	Marion
Springhill College	Springhill
University of Alabama	University

ARIZONA

University of Arizona	Tucson
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ARKANSAS

Hendrix College	Conway
Quachita College	Arkadelphia
University of Arkansas	Fayetteville

CALIFORNIA

California Institute of Technology	Pasadena
Dominican College of San Rafael	San Rafael
Mills College	Oakland
Occidental College	Los Angeles
Pomona College	Claremont
Stanford University	Stanford University
University of California	Berkeley
University of Redlands	Redlands
University of Southern California	Los Angeles

COLORADO

Colorado Agriculture College	Fort Collins
Colorado College	Colorado Springs
Loretto Heights College	Denver
University of Colorado	Boulder
University of Denver	Denver

CONNECTICUT

Connecticut College for Women	New London
Trinity College	Hartford
Wesleyan University	Middletown
Yale University	New Haven

DELAWARE

University of Delaware	Newark
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DISTRICT OF COLUMBIA

Catholic University of America	Washington, D. C.
George Washington University	Washington, D. C.
Georgetown University	Washington, D. C.
Howard University	Washington, D. C.
Trinity College	Washington, D. C.

FLORIDA

<i>Name of Institution</i>	<i>Location</i>
Florida State College for Women	Tallahassee
Southern College	Lakeland
University of Florida	Gainesville

GEORGIA

Agnes Scott College	Decatur
Emory University	Oxford
Georgia School of Technology	Atlanta
Georgia State College for Women	Milledgeville
La Grange College	La Grange
Mercer University	Macon
Shorter College for Women	Rome
University of Georgia	Athens
Wesleyan College	Macon

HAWAII

University of Hawaii	Honolulu, T. H.
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IDAHO

College of Idaho	Caldwell
University of Idaho	Moscow

ILLINOIS

Armour Institute of Technology	Chicago
Augustana College and Theological Seminary	Rock Island
Bradley Polytechnic Institute	Peoria
Carthage College	Carthage
De Paul University	Chicago
Eureka College	Eureka
Illinois College	Jacksonville
Illinois Wesleyan University	Bloomington
Illinois Woman's College	Jacksonville
James Millikin University	Decatur
Knox College	Galesburg
Lake Forest College	Lake Forest
Lewis Institute	Chicago
Loyola University	Chicago
Monmouth College	Monmouth
North Central College	Naperville
Northwestern University	Evanston
Rockford College	Rockford

<i>Name of Institution</i>	<i>Location</i>
Rosary College	River Forest
Shurtleff College	Alton
University of Chicago	Chicago
University of Illinois	Urbana
Wheaton College	Wheaton

INDIANA

Butler University	Indianapolis
De Pauw University	Greencastle
Earlham College	Richmond
Franklin College of Indiana	Franklin
Hanover College	Hanover
Indiana University	Bloomington
Purdue University	Lafayette
Rose Polytechnic Institute	Terre Haute
St. Mary's College	Notre Dame
St. Mary of the Woods College	St. Mary of the Woods
University of Notre Dame du Lac	Notre Dame
Wabash College	Crawfordsville

IOWA

Coe College	Cedar Rapids
Columbia College of Dubuque	Dubuque
Cornell College	Mt. Vernon
Drake University	Des Moines
Grinnell College	Grinnell
Iowa State College of Agriculture and Mechanic Arts	Ames
Iowa Wesleyan College	Mt. Pleasant
Luther College	Decorah
Morningside College	Sioux City
Mt. St. Joseph College	Dubuque
Parsons College	Fairfield
Penn College	Oskaloosa
St. Ambrose College	Davenport
Simpson College	Indianola
University of Dubuque	Dubuque
University of Iowa	Iowa City

KANSAS

Baker University	Baldwin
College of Emporia	Emporia
Kansas State Agricultural College	Manhattan
Municipal University of Wichita	Wichita

<i>Name of Institution</i>	<i>Location</i>
Ottawa University	Ottawa
St. Benedict's College	Atchison
St. Mary's College	St. Mary's
Southwestern College	Winfield
University of Kansas	Lawrence
Washburn College	Topeka

KENTUCKY

Berea College	Berea
Centre College of Kentucky	Danville
Georgetown College	Georgetown
Transylvania College	Lexington
University of Kentucky	Lexington
University of Louisville	Louisville

LOUISIANA

Centenary College of Louisiana	Shreveport
Louisiana College	Pineville
Louisiana State University	Baton Rouge
Newcomb College	New Orleans
Southwestern Louisiana Institute	Lafayette
Tulane University of Louisiana	New Orleans

MAINE

Bates College	Lewiston
Bowdoin College	Brunswick
Colby College	Waterville
University of Maine	Orono

MARYLAND

College of Notre Dame of Maryland	Baltimore
Goucher College	Baltimore
Hood College	Frederick
Johns Hopkins University	Baltimore
Morgan College	Baltimore
Mt. St. Mary's College	Emmitsburg
St. John's College	Annapolis
University of Maryland	College Park
Washington College	Chestertown
Western Maryland College	Westminster

MASSACHUSETTS

Amherst College	Amherst
Boston College	Boston
Boston University	Boston

<i>Name of Institution</i>	<i>Location</i>
Clark University	Worcester
Harvard University	Cambridge
Massachusetts Agricultural College	Amherst
Massachusetts Institute of Technology	Cambridge
Mt. Holyoke College	South Hadley
Radcliffe College	Cambridge
Simmons College	Boston
Smith College	Northampton
Tufts College	Tufts College
Wellesley College	Wellesley
Wheaton College	Norton
Williams College	Williamstown
Worcester Polytechnic Institute	Worcester

MICHIGAN

Albion College	Albion
Alma College	Alma
Battle Creek College	Battle Creek
College of the City of Detroit	Detroit
Hillsdale College of Michigan	Hillsdale
Hope College	Holland
Kalamazoo College	Kalamazoo
Marygrove College	Detroit
Michigan State College of Agriculture and Applied Science	East Lansing
Michigan College of Mines	Houghton
University of Detroit	Detroit
University of Michigan	Ann Arbor

MINNESOTA

Carleton College	Northfield
College of St. Catherine	St. Paul
College of St. Teresa	Winona
College of St. Thomas	St. Paul
Concordia College	Moorhead
Gustavus Adolphus College	St. Peter
Hamline University	St. Paul
Macalester College	St. Paul
St. Olaf College	Northfield
University of Minnesota	Minneapolis

MISSISSIPPI

Millsaps College	Jackson
Mississippi Agricultural and Mechanical College	A. and M. College

<i>Name of Institution</i>	<i>Location</i>
Mississippi College	Clinton
Mississippi State College for Women	Columbus
Mississippi Woman's College	Hattiesburg
University of Mississippi	University

MISSOURI

Central College	Fayette
Culver-Stockton College	Canton
Drury College	Springfield
Lindenwood College	St. Charles
Missouri Valley College	Marshall
Missouri Wesleyan College	Cameron
Park College	Parkville
St. Louis University	St. Louis
University of Missouri	Columbia
Washington University	St. Louis
Webster College for Women	Webster Groves
Westminster College	Fulton
William Jewell College	Liberty

MONTANA

Montana State College	Bozeman
State University of Montana	Missoula

NEBRASKA

Creighton University	Omaha
Doane College	Crete
Hastings College	Hastings
Nebraska Wesleyan University	Lincoln
University of Nebraska	Lincoln

NEVADA

University of Nevada	Reno
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NEW HAMPSHIRE

Dartmouth College	Hanover
University of New Hampshire	Durham

NEW JERSEY

College of St. Elizabeth	Convent Station
Georgian Court College	Lakewood
Princeton University	Princeton
Rutgers University	New Brunswick
Stevens Institute of Technology	Hoboken

NEW MEXICO

<i>Name of Institution</i>	<i>Location</i>
New Mexico College of Agriculture and Mechanic Arts	State College
State University of New Mexico	Albuquerque

NEW YORK

Adelphi College of Brooklyn	Brooklyn
Alfred University	Alfred
Barnard College	New York City
Canisius College of Buffalo	Buffalo
Clarkson School of Technology	Potsdam
Colgate University	Hamilton
College of the City of New York	New York City
College of Mt. St. Vincent on the Hud- son	New York City
College of New Rochelle	New Rochelle
College of the Sacred Heart	New York City
Columbia University	New York City
Cornell University	Ithaca
Elmira College	Elmira
Fordham University	Fordham
Hamilton College	Clinton
Hobart College	Geneva
Hunter College of the City of New York	New York City
Manhattan College	New York City
New York University	New York City
Niagara University	Niagara
Polytechnic Institute of Brooklyn	Brooklyn
Rensselaer Polytechnic Institute	Troy
Skidmore College	Saratoga Springs
St. Bonaventure's College and Seminary	St. Bonaventure
St. John's College	Brooklyn
St. Lawrence University	Canton
St. Stephen's College	Annandale
Syracuse University	Syracuse
Union College	Schenectady
United States Military Academy	West Point
University of Buffalo	Buffalo
University of Rochester	Rochester
Vassar College	Poughkeepsie
Wells College	Aurora
William Smith College	Geneva

NORTH CAROLINA

<i>Name of Institution</i>	<i>Location</i>
Davidson College	Davidson
Duke University	Durham
Elon College	Elon
Greensboro College	Greensboro
Guilford College	Guilford College
Meredith College	Raleigh
North Carolina College for Women	Greensboro
Queens College	Charlotte
Salem College	Winston-Salem
University of North Carolina	Chapel Hill
Wake Forest College	Wake Forest

NORTH DAKOTA

Jamestown College	Jamestown
North Dakota Agricultural College	Agricultural College
University of North Dakota	Grand Forks

OHIO

Antioch College	Yellow Springs
Baldwin Wallace College	Berea
Capital University	Columbus
Case School of Applied Science	Cleveland
College of Wooster	Wooster
Denison University	Granville
Heidelberg College	Tiffin
Hiram College	Hiram
John Carroll University	Cleveland
Kenyon College	Gambier
Lake Erie College	Painesville
Marietta College	Marietta
Miami University	Oxford
Mt. Union College	Alliance
Municipal University of Akron	Akron
Muskingum College	New Concord
Oberlin College	Oberlin
Ohio State University	Columbus
Ohio University	Athens
Ohio Wesleyan University	Delaware
Otterbein University	Westerville
St. Xavier College	Cincinnati
University of Cincinnati	Cincinnati
University of the City of Toledo	Toledo

<i>Name of Institution</i>	<i>Location</i>
Western College for Women	Oxford
Western Reserve University	Cleveland
Wittenberg College	Springfield

OKLAHOMA

Oklahoma Agricultural and Mechanical College	Stillwater
Oklahoma College for Women	Chickasha
Phillips University	Enid
University of Oklahoma	Norman

OREGON

Oregon State Agricultural College	Corvallis
Pacific University	Forest Grove
Reed College	Portland
University of Oregon	Eugene
Willamette University	Salem

PENNSYLVANIA

Albright College	Myerstown
Allegheny College	Meadville
Bryn Mawr College	Bryn Mawr
Bucknell University	Lewisburg
Carnegie Institute of Technology	Pittsburgh
Dickinson College	Carlisle
Franklin and Marshall College	Lancaster
Geneva College	Beaver Falls
Gettysburg College	Gettysburg
Grove City College	Grove City
Haverford College	Haverford
Juniata College	Huntingdon
Lafayette College	Easton
Lebanon Valley College	Annville
Lehigh University	Bethlehem
Lincoln University	Lincoln University
Marywood College	Scranton
Moravian College and Theological Seminary	Bethlehem
Muhlenberg College	Allentown
Pennsylvania College for Women	Pittsburgh
Pennsylvania State College	State College
St. Joseph College	Philadelphia
St. Vincent College	Beatty
Seton Hill College	Greensburg
Swarthmore College	Swarthmore

<i>Name of Institution</i>	<i>Location</i>
Temple University	Philadelphia
Thiel College	Greenville
University of Pennsylvania	Philadelphia
University of Pittsburgh	Pittsburgh
Ursinus College	Collegeville
Villanova College	Villanova
Washington and Jefferson College	Washington
Westminster College	New Wilmington
Wilson College	Chambersburg

RHODE ISLAND

Brown University	Providence
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SOUTH CAROLINA

Chicora College for Women	Columbia
Coker College	Hartsville
College of Charleston	Charleston
Columbia College	Columbia
Converse College	Spartanburg
Erskine College	Due West
Furman University	Greenville
Lander College	Greenwood
Presbyterian College of South Carolina	Clinton
The Citadel	Charleston
University of South Carolina	Columbia
Winthrop College	Rock Hill
Wofford College	Spartanburg

SOUTH DAKOTA

Dakota Wesleyan University	Mitchell
Huron College	Huron
South Dakota State College of Agriculture and Mechanic Arts	Brookings
South Dakota State School of Mines	Rapid City
University of South Dakota	Vermillion
Yankton College	Yankton

TENNESSEE

Maryville College	Maryville
Southwestern	Memphis
Tusculum College	Greenville
University of Chattanooga	Chattanooga
University of the South	Sewanee
University of Tennessee	Knoxville
Vanderbilt University	Nashville

TEXAS

<i>Name of Institution</i>	<i>Location</i>
Agricultural and Mechanical College of Texas	College Station
Baylor College for Women	Belton
Baylor University	Waco
College of Industrial Arts	Denton
Incarnate Word College	San Antonio
Our Lady of the Lake College	San Antonio
Rice Institute	Houston
Southwestern University	Georgetown
Southern Methodist University	Dallas
Texas Christian University	Fort Worth
Trinity University	Waxahachie
University of Texas	Austin

UTAH

Brigham Young University	Provo
University of Utah	Salt Lake City
Utah Agricultural College	Logan

VERMONT

Middlebury College	Middlebury
University of Vermont	Burlington

VIRGINIA

Bridgewater College	Bridgewater
College of William and Mary in Virginia	Williamsburg
Emory and Henry College	Emory
Hampden-Sidney College	Hampden-Sidney
Randolph-Macon College for Men	Ashland
Randolph-Macon Woman's College	Lynchburg
Sweet Briar College	Sweet Briar
University of Richmond	Richmond
University of Virginia	Charlottesville
Virginia Military Institute	Lexington
Virginia Polytechnic Institute	Blacksburg
Washington and Lee University	Lexington

WASHINGTON

College of Puget Sound	Tacoma
State College of Washington	Pullman
University of Washington	Seattle
Whitman College	Walla Walla

WEST VIRGINIA

<i>Name of Institution</i>	<i>Location</i>
Bethany College	Bethany
West Virginia University	Morgantown
West Virginia Wesleyan College	Buckhannon

WISCONSIN

Beloit College	Beloit
Carroll College	Waukesha
Lawrence College	Appleton
Marquette University	Milwaukee
Milwaukee-Downer College	Milwaukee
St. Mary's College	Prairie du Chien
University of Wisconsin	Madison

WYOMING

University of Wyoming	Laramie
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Teachers' Colleges

COLORADO

Colorado State Teachers' College	Greeley
Western State College of Colorado	Gunnison

IDAHO

State Normal School	Albion
State Normal School	Lewiston

ILLINOIS

Illinois State Normal University	Normal
Eastern Illinois State Teachers' College	Charleston
Northern Illinois State Teachers' College	De Kalb
Southern Illinois State Normal Univ.	Carbondale
Western Illinois State Teachers' College	Macomb

INDIANA

Indiana State Normal School	Terre Haute
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IOWA

Iowa State Teachers' College	Cedar Falls
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KANSAS

<i>Name of Institution</i>	<i>Location</i>
Fort Hayes Normal School	Fort Hayes
State Manual Train. Norm. School	Pittsburgh
State Normal School	Emporia

KENTUCKY

Western Kentucky Teachers' College	Bowling Green
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LOUISIANA

Louisiana State Normal College	Natchitoches
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MICHIGAN

Central Michigan Normal School	Mount Pleasant
Detroit Teachers' College	Detroit
Michigan State Normal College	Ypsilanti
Northern State Normal School	Marquette
Western State Normal School	Kalamazoo

MINNESOTA

State Teachers' College	Moorhead
State Teachers' College	Winona
St. Cloud State Teachers' College	St. Cloud

MISSOURI

Central Mo. State Teachers' College	Warrensburg
Garris Teachers' College	St. Louis
Northwest Mo. State Teachers' Coll.	Maryville
State Teachers' College	Kirksville
Southeast Mo. State Teachers' Coll.	Cape Girardeau
Southwest Mo. State Teachers' Coll.	Springfield
Teachers College	Kansas City

MONTANA

State Normal School	Dillon
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NEBRASKA

State Normal School and Teachers' College	Chadron
State Normal School and Teachers' College	Kearney
State Normal School and Teachers' College	Peru
State Normal School and Teachers' College	Wayne

NEW YORK

<i>Name of Institution</i>	<i>Location</i>
New York State College for Teachers	Albany

NORTH DAKOTA

State Normal School	Mayville
State Teachers' College	Valley City
Teachers College	Minot

OHIO

Cleveland School of Education	Cleveland
State Normal College	Bowling Green
State Normal College	Kent
State Normal College of Ohio Univ.	Athens
Teachers' College of Miami Univ.	Oxford

OKLAHOMA

Central State Teachers' College	Edmond
East Central State Teachers' College	Ada
Northeastern State Teachers' College	Tahlequah
Northwestern State Teachers' College	Alva
Southeastern State Teachers' College	Durant
Southwestern State Teachers' College	Weatherford

OREGON

State Normal School	Monmouth
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SOUTH DAKOTA

Northern Norm. and Indus. School	Aberdeen
State Normal School	Madison

TENNESSEE

George Peabody College for Teachers	Nashville
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WASHINGTON

State Normal School	Bellingham
State Normal School	Centralia
State Normal School	Cheney
State Normal School	Ellensburg

WEST VIRGINIA

Marshall College	Huntington, W. Va.
West Virginia Collegiate Institute	Institute, W. Va.

WISCONSIN

<i>Name of Institution</i>	<i>Location</i>
State Normal School	Superior

Junior Colleges

ALABAMA

Marion Institute	Marion
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ARKANSAS

Central Junior College	Conway
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COLORADO

Regis College	Denver
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GEORGIA

Junior College of Augusta	Augusta
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IDAHO

Idaho Technical Institute	Pocatello
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ILLINOIS

Broadview College	La Grange
Crane Junior College	Chicago
Elmhurst College	Elmhurst
Frances Shimer School	Mount Carrol
Joliet Junior College	Joliet
Monticello Seminary	Godfrey
Morton Junior College	Cicero
Y. M. C. A. School of Liberal Arts	Chicago

IOWA

Graceland College	Lamoni
Mason City Junior College	Mason City

MICHIGAN

Bay City Junior College	Bay City
Detroit Junior College	Detroit
Emmanuel Missionary College	Berrien Springs
Grand Rapids Junior College	Grand Rapids
Highland Park Junior College	Highland Park

MINNESOTA

<i>Name of Institution</i>	<i>Location</i>
Hibbing Junior College	Hibbing
Rochester Junior College	Rochester
Virginia Junior College	Virginia

MISSISSIPPI

Gulf Park College	Gulfport
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MISSOURI

Christian College	Columbia
Junior College of Kansas	Kansas City
Kemper Military School	Boonville
The Principia	St. Louis
St. Joseph Junior College	St. Joseph
Stephens Junior College	Columbia
William Woods College	Fulton

MONTANA

Mt. St. Charles College	Helena
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NEBRASKA

Union College	College View
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NORTH CAROLINA

Mars Hill College	Mars Hill
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OKLAHOMA

Northeastern Oklahoma Junior College	Miami
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TENNESSEE

Tennessee Wesleyan College	Athens
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TEXAS

John Tarleton Agricultural College	Stephenville
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VIRGINIA

Sullins College	Bristol
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Psychological Examinations for College Freshmen

COMPLETE returns for the 1926 edition of psychological examination have not yet been received, and it has not even been possible to prepare norms including all the reports which have come in. The norms given in the following tables are for about 5,200 students in 26 colleges. The reports are coming in steadily, and it is intended to publish more complete norms in a later issue of the EDUCATIONAL RECORD. The data covered by the norms given here are extensive enough to be reliable and will afford a valid basis for comparison of scores in one college with a large group of college freshmen.

In addition to these norms for each separate test in the 1926 edition, Table 8 gives the percentile ranks for various gross scores. A single index of a student's performance in the examination is given by the percentile rank of his gross score rather than by a combination of his ranks in the separate tests.

SCORING METHODS

A few points in the methods of scoring the tests should be made clear, although the scoring has been direct and uncomplicated.

No Corrections for Errors.—The score in each test is simply the number of right answers or, in the case of the 1926 edition, the number of right answers multiplied by a constant. No correction is made for wrong answers in any of the tests.

Median Percentile Scores.—School administrators are often interested to know a single score for the whole examination rather than separate scores in all the tests. Since the tests are of unequal length it is not possible to add the raw scores directly, and the use of the median percentile rank as a single score was recommended for the 1924 and for the 1925 editions of the examination.

Profile Charts.—Charts showing the percentile standing of a student in each test and arranged so that similar tests were adjacent to each other were used with the 1924 examination. Such a method was of more value in educational guidance than as a means of obtaining a single rating on a student.

Gross Scores.—All the tests in the 1926 edition have been used in previous examinations and are comparable in difficulty with former tests. The weightings for the separate scores in the 1926 examination are based on the distributions obtained in former tests as follows. The standard deviation was calculated for each distribution. The weighting multipliers are proportional to the reciprocals of the standard deviations (some approximations being used in order to make all the multipliers integral). It is believed that the gross score obtained by multiplying each test score by a given constant and adding the products is a useful one, and a preliminary study has shown it to be practically as diagnostic of school success as a score obtained by the method of partial correlation. If a single rank of the student is desired, the percentile rank of the gross score should be used rather than the median percentile rank.

TABLE 1.—OPPOSITES TEST (1926)
Frequency Table and Percentile Ranks for 5,190 Students in 26 Colleges
Average Score = 21.15

Score	Frequency	Percentile Rank	Score	Frequency	Percentile Rank
0	394	.038	42	125	.913
3	159	.091	45	93	.934
6	310	.136	48	80	.950
9	410	.206	51	62	.964
12	478	.291	54	39	.974
15	458	.382	57	33	.981
18	433	.467	60	26	.987
21	395	.547	63	15	.990
24	389	.622	66	18	.994
27	326	.692	69	7	.996
30	322	.754	72	10	.998
33	250	.809	75	2	.999
36	196	.852	78	1	.999
39	155	.886	81	4	.999

TABLE 2.—PROVERBS TEST (1926)

Frequency Table and Percentile Ranks for 5,194 Students in 26 Colleges
Average Score = 23.52

Score	Frequency	Percentile Rank	Score	Frequency	Percentile Rank
0	171	.016	32	501	.735
4	258	.058	36	429	.825
8	393	.120	40	297	.895
12	506	.207	44	201	.943
16	501	.304	48	126	.974
20	581	.408	52	44	.991
24	555	.517	56	22	.997
28	604	.629	60	5	.999

TABLE 3.—ARITHMETIC TEST (1926)

Frequency Table and Percentile Ranks for 5,198 Students in 26 Colleges
Average Score = 28.54

Score	Frequency	Percentile Rank	Score	Frequency	Percentile Rank
0	50	.048	44	256	.852
4	151	.024	48	195	.895
8	250	.062	52	150	.928
12	371	.122	56	110	.953
16	504	.207	60	77	.971
20	514	.305	64	45	.983
24	612	.413	68	32	.991
28	526	.522	72	20	.996
32	532	.624	76	9	.998
36	442	.718	80	4	.999
40	348	.794			

TABLE 4.—ARTIFICIAL LANGUAGE TEST (1926)
Frequency Table and Percentile Ranks for 5,207 Students in 26 Colleges
 Average Score = 24.11

Score	Frequency	Percentile Rank	Score	Frequency	Percentile Rank
0	53	.005	38	89	.878
1	19	.012	39	68	.893
2	24	.016	40	57	.905
3	43	.023	41	57	.916
4	46	.031	42	55	.927
5	52	.041	43	54	.937
6	60	.051	44	30	.945
7	56	.062	45	25	.950
8	76	.075	46	24	.955
9	59	.088	47	7	.958
10	71	.101	48	11	.960
11	104	.117	49	16	.962
12	97	.137	50	21	.966
13	108	.156	51	29	.971
14	119	.178	52	24	.976
15	143	.203	53	20	.980
16	230	.239	54	10	.983
17	237	.284	55	7	.985
18	244	.330	56	7	.986
19	211	.374	57	6	.987
20	175	.411	58	7	.988
21	158	.443	59	7	.990
22	154	.473	60	7	.991
23	169	.504	61	6	.992
24	185	.538	62	4	.993
25	182	.573	63	3	.994
26	177	.608	64	5	.995
27	167	.641	65	4	.996
28	152	.671	66	4	.996
29	124	.698	67	2	.997
30	125	.722	68	2	.997
31	104	.744	69	4	.998
32	119	.765	70	1	.998
33	118	.788	71	1	.999
34	106	.809	72	3	.999
35	91	.828	73	2	.999
36	93	.846	74	2	.999
37	75	.862			

TABLE 5.—NUMBER COMPLETION TEST (1926)

Frequency Table and Percentile Ranks for 5,207 Students in 26 Colleges
Average Score = 18.76

Score	Frequency	Percentile Rank	Score	Frequency	Percentile Rank
0	473	.045	26	263	.708
2	157	.106	28	282	.761
4	165	.137	30	249	.812
6	179	.170	32	210	.856
8	217	.208	34	147	.890
10	267	.254	36	159	.919
12	265	.305	38	112	.945
14	315	.361	40	93	.965
16	282	.418	42	65	.980
18	308	.475	44	35	.990
20	348	.538	46	23	.995
22	296	.600	48	13	.999
24	284	.656			

TABLE 6.—COMPLETION TEST (1926)

Frequency Table and Percentile Ranks for 5,203 Students in 26 Colleges
Average Score = 20.41

Score	Frequency	Percentile Rank	Score	Frequency	Percentile Rank
0	20	.002	30	237	.842
2	52	.009	32	196	.884
4	96	.023	34	136	.916
6	179	.049	36	110	.939
8	218	.088	38	75	.957
10	298	.137	40	56	.970
12	363	.201	42	38	.979
14	363	.271	44	34	.986
16	379	.342	46	25	.991
18	456	.422	48	10	.995
20	481	.512	50	12	.997
22	388	.596	52	3	.999
24	370	.668	54	3	.999
26	299	.733	56	4	.999
28	301	.790	58	1	.999

TABLE 7.—ANALOGIES TEST (1926)

Frequency Table and Percentile Ranks for 5,220 Students in 26 Colleges
Average Score = 20.67

Score	Frequency	Percentile Rank	Score	Frequency	Percentile Rank
0	146	.014	21	167	.468
1	34	.031	22	184	.501
2	42	.039	23	202	.538
3	69	.049	24	174	.574
4	62	.062	25	217	.612
5	103	.078	26	186	.650
6	114	.098	27	170	.684
7	105	.119	28	186	.719
8	105	.139	29	187	.754
9	112	.160	30	191	.791
10	94	.180	31	224	.830
11	134	.202	32	239	.875
12	102	.224	33	156	.912
13	116	.245	34	128	.940
14	119	.268	35	77	.959
15	127	.291	36	82	.975
16	134	.316	37	48	.987
17	137	.342	38	31	.995
18	173	.372	39	5	.998
19	163	.404	40	8	.999
20	167	.436			

TABLE 8.—GROSS SCORES ON TEST (1926 EDITION)

Frequency Table and Percentile Ranks for 5,137 Students in 26 Colleges
Average Score = 156.64

Score	Frequency	Percentile Rank	Score	Frequency	Percentile Rank
0-9	0	.....	200-209	243	.782
10-19	8	.001	210-219	213	.827
20-29	18	.003	220-229	169	.864
30-39	34	.008	230-239	128	.893
40-49	79	.019	240-249	126	.918
50-59	100	.037	250-259	85	.938
60-69	136	.060	260-269	69	.953
70-79	178	.090	270-279	51	.965
80-89	229	.130	280-289	46	.974
90-99	225	.174	290-299	33	.982
100-109	268	.222	300-309	27	.988
110-119	267	.274	310-319	14	.992
120-129	268	.326	320-329	17	.994
130-139	337	.385	330-339	5	.997
140-149	274	.445	340-349	6	.998
150-159	302	.501	350-359	3	.999
160-169	299	.559	360-369	1	.999
170-179	343	.622	370-379	1	.999
180-189	275	.682	380-389	2	.999
190-199	258	.734			

EQUIVALENT SCORES

It is sometimes desirable to compare the performance of one class with the succeeding class. This is occasionally of considerable interest, but, unless the tests are standardized so as to be directly equivalent in their scores, this cannot be done without some approximations. Since it is probably true that the fifty or sixty thousand students who have taken the American Council tests each year are of practically the same average ability, it is a sound procedure to equate the scores of successive tests on the basis of equivalent percentile ranks. This assumes that the tests are used as measures of the same ability. The procedure, of course, should not be used when the inter-test correlation is low because then different functions are being measured.

As an example of the procedure for determining equivalent scores, we may select the two Completion tests, 1924 edition and the 1925 edition. In Table 9 a set of percentile ranks is tabulated in the first column. The corresponding scores in the two Completion tests are listed in the second and third columns. A table of this form can readily be prepared from the tables of norms of performance. Since there were four tests in the 1924 and 1925 editions which measure practically the same function, the tabulation has been made for these

TABLE 9.—COMPLETION TEST

Percentile	Score in 1924 Edition	Score in 1925 Edition	Percentile	Score in 1924 Edition	Score in 1925 Edition
99	32.5	26.8	40	13.3	8.9
95	27.5	22.1	30	11.5	7.4
90	24.7	19.2	20	9.5	5.9
80	21.3	16.0	10	7.0	4.1
70	18.8	13.8	5	5.0	2.8
60	16.8	12.0	1	2.0	1.0
50	15.0	10.4			

four tests. These four tests are Completion, Opposites, Artificial Language, and Arithmetic. Equivalent scores for the two editions may be read directly from Table 10. Similar tables for other comparisons may be prepared in a similar manner.

A good description of the methods of determining corresponding test scores may be found in Otis, "Statistical Method in Educational Measurement," Chapter 10.

TABLE 10.—EQUIVALENT SCORES IN 1924 AND 1925 EDITIONS

Completion		Opposites		Artificial Language		Arithmetic	
1924	1925	1924	1925	1924	1925	1924	1925
32.7	27.0	19.8	22	65.0	57	15.6	18
31.7	26.0	19.0	21	62.7	55	14.2	17
30.6	25.0	18.2	20	60.2	53	13.0	16
29.6	24.0	17.4	19	58.0	51	11.8	15
28.6	23.0	16.6	18	55.5	49	10.8	14
27.5	22.0	15.8	17	53.0	47	9.8	13
26.6	21.0	14.9	16	50.5	45	8.8	12
25.6	20.0	13.9	15	48.2	43	7.8	11
24.6	19.0	13.0	14	44.7	41	6.9	10
23.4	18.0	12.1	13	41.7	39	6.0	9
22.4	17.0	11.2	12	39.5	37	5.2	8
21.4	16.0	10.3	11	37.2	35	4.3	7
20.2	15.0	9.3	10	34.7	33	3.6	6
19.1	14.0	8.4	9	32.5	31	2.8	5
18.0	13.0	7.4	8	30.2	29	2.1	4
16.8	12.0	6.4	7	28.0	27	1.4	3
15.7	11.0	5.5	6	25.7	25	.8	2
14.6	10.0	4.5	5	23.2	23	.2	1
13.4	9.0	3.6	4	21.5	21		
12.2	8.0	2.7	3	19.2	19		
11.0	7.0	1.8	2	16.5	17		
9.7	6.0	.9	1	14.0	15		
8.3	5.0			12.0	13		
6.9	4.0			10.0	11		
5.6	3.0			8.2	9		
3.7	2.0			6.7	7		
2.0	1.0			4.5	5		
				2.2	3		
				0	1		

RELIABILITY OF THE TESTS

A study of the reliability of the test scores was made for the 1925 edition of the test. Two hundred and fifty papers were marked separately for the scores in even-numbered and in odd-numbered questions for each test. Coefficients of reliability were then calculated by means of the Spearman-Brown formula and the following results given in Table 11 obtained. These results show a high reliability.

TABLE 11.—RELIABILITY OF 1926 EDITION

<i>Test Score</i>	<i>Coefficient of Reliability (Spearman-Brown formula)</i>
Opposites Test.....	.828
Proverbs Test.....	.711
Arithmetic Test.....	.845
Artificial Language Test.....	.979
Number Completion Test.....	.924
Completion Test.....	.805
Analogies Test.....	.966
Gross Score.....	.959

PREDICTIVE VALUE

A more comprehensive study has been made of the predictive value of the 1925 edition. Correlations have been computed for more colleges, and in addition a single score has been calculated for the whole test, making it possible to give a more reliable single figure for the predictive value of the total examination. The method of determining these total scores was explained in the section on "Scoring Methods."

Table 12 shows the correlations calculated for the 1925 edition.

TABLE 12.—THE PREDICTIVE VALUE OF THE 1925 EXAMINATION
Coefficients of Correlation Between Test Scores and Freshman Scholarships

College	Men or Women	Completion	Arithmetic	Artif. Language	Analogies I	Analogies II	No. Completion	Absurdities	Opposites	Weighted Total Score
Allegheny College.....	M W	.....	.....	.....	.....	.....	.....	.....	.....	.533
Amherst College.....	M	.....	.....	.....	.137	.299	.347	.....	.....	.387
Baker University.....	M W	.....	.....	.....	.....	.....	.....	.....	.....	.561
Case School of Applied Science..	M	.170	.265	.176	.189	.142	.293	.199	.243	.310
University of Chicago (Liberal Arts).....	M	.492	.410	.328	.299	.446	.338	.355	.472	.558
University of Chicago (Liberal Arts).....	W	.459	.337	.407	.354	.318	.361	.373	.411	.501
University of Chicago (Liberal Arts).....	M W	.444	.319	.377	.329	.381	.312	.368	.444	.519
University of Chicago (Education).....	M W	.248	.466	.335	.281	.198	.273	.318	.353	.479
University of Colorado.....	M W	.....	.....	.....	.....	.....	.....	.....	.....	.551
Dickinson College.....	M W	.323	.334	.411	.297	.412	.358	.187	.315	.480
Hobart College.....	M	.....	.....	.....	.....	.....	.....	.....	.....	.367
William Smith College.....	W	.....	.....	.....	.....	.....	.....	.....	.....	.243
Massachusetts Agr. College.....	M W	.....	.....	.....	.....	.....	.....	.....	.....	.413
Mt. Holyoke College.....	W	.388	.310	.264	.248	.100	.220	.231	.405	.445
H. Sophie Newcomb College.....	W	.....	.....	.....	.....	.....	.....	.....	.....	.247
University of New Hampshire (Liberal Arts).....	M W	.....	.....	.....	.....	.....	.....	.....	.....	.303
University of New Hampshire (Tech.).....	M	.....	.....	.....	.....	.....	.....	.....	.....	.296
Pomona College.....	M	.525	.417	.361	.388	.411	.220	.294	.472	.572
Pomona College.....	W	.383	.397	.335	.325	.373	.310	.368	.410	.541
Ripon College.....	M W	.471	.350	.387	.295	.320	.244	.313	.388	.464
Swarthmore College.....	M W	.324	.112	.373	.298	.280	.226	.267	.371	.443
Tufts College.....	M	.341	.376	.304	.254	.106	.052	.269	.331	.458
Wells College.....	W	.....	.....	.....	.....	.....	.....	.....	.....	.495
Winona State Teachers College.....	M W	.....	.....	.....	.....	.....	.....	.....	.....	.487
Wittenberg College.....	M	.....	.....	.....	.....	.....	.....	.....	.....	.532
Wittenberg College.....	W	.....	.....	.....	.....	.....	.....	.....	.....	.512
Average Correlations for all schools.....	.....	.372	.341	.338	.284	.291	.274	.295	.385	.452

REPORTS FROM THE COLLEGES

Amherst College, Amherst, Mass.

Prof. C. H. Toll has made a comparative study of the grades earned during the freshman year by the students who were in the highest one-fourth of the class on the basis of several tests and by those students who were in the lowest one-fourth according to test scores. The table below shows the average number of *A* and *B* grades per student and the average number of *E* and *F* grades. There were about forty-five students in each group.

Test	Number of A & B grades		Number of E & F grades	
	High Quarter	Low Quarter	High Quarter	Low Quarter
Otis Test.....	3.08	1.42	.32	.53
Amherst Test (Completion)....	2.83	1.43	.50	.56
Arithmetic (A. C. E.).....	2.31	1.46	.50	.69
Artificial Language (A. C. E.)..	3.25	1.35	.26	.78
Opposites (A. C. E.).....	3.46	1.38	.30	.71
Combined Tests.....	3.25	1.18	.42	.75

Careful inspection of this table indicates that the best tests in order are the Opposites Test, the Artificial Language Test, the Combined Tests, and the Otis Test. Such a conclusion must be made only with the reservation necessary in such a small number of cases and in the absence of data on a random sample of the group studied.

Antioch College, Yellow Springs, Ohio

Prof. H. B. English reported a Pearson coefficient of correlation of $+.39$ between average decile rank and average scholarship for a group of upper classmen.

Bucknell University, Lewisburg, Pa.

The following paragraphs are selected from a report submitted by Prof. F. G. Davis on the predictive value of the 1924 examination.

Of students ranking in the lowest quartile of the psychological test 53 per cent ranked in the lowest quarter of college grades, 31 per cent in the third quarter, 14 per cent in second quarter, and only 2 per cent in the first quarter. Thus it appears that 84 per cent who were in the lowest quarter of the test scores were in the lower *half* in college grades.

Students ranking in the third quartile in the tests ranked as follows in college grades: 4th quarter 28 per cent; 3d quarter 26 per cent; 2nd quarter 34 per cent; 1st quarter 12 per cent. Fifty-four per cent of grades made by students ranking in the third quarter of the psychological tests were in the lower half and 46 per cent in the upper half.

Students ranking in the second quarter in the test scores ranked as follows in college grades: 4th quarter 24 per cent; 3d quarter 22 per cent; 2nd quarter 27 per cent; 1st quarter 27 per cent.

Students ranking in the first quarter in the test scores ranked as follows in college grades: 4th quarter 7 per cent; 3d quarter 8 per cent; 2nd quarter 16 per cent; 1st quarter 69 per cent. Thus 85 per cent of students ranking in the highest quarter in psychological test scores ranked in the upper half of their freshman college classes.

The upper quartile in the test scores is 185. Adding 25 to this making 210, and taking all test scores above 210, we find that 87 per cent rank in the highest quarter in their college classes and 13 per cent rank in the second quarter, none of them getting as low as the third quarter. Subtracting a like amount from the lower quartile we learn that 80 per cent rank in the lowest quarter of their class and 20 per cent rank in the third quarter, none rising so high as the first half of the group.

Results at Bucknell lead me to conclude that test results furnish a better basis for grouping or rejection of incoming freshmen than do reports from high schools.

Dropped for Poor Scholarship.—Students dropped for poor scholarship stood as follows on the psychological test: 71 per cent ranked in the lowest fourth; 12 per cent ranked in the third quarter and 17 per cent in the second quarter. This would indicate that the test should be valuable in determining who should not be admitted.

Artificial Language and foreign language taken in college, r equals .48.

<i>Average score in Art. Language</i>	<i>Average Grade in For. Language</i>
40	90-98
32.5	80-90
24.1	70-80
22.5	60-70
23	50-60
19.1	0-50

Proverbs and freshman English. r equals .53.

Arithmetic and freshman mathematics. r equals .37.

Grammar and freshman grades in foreign language. r equals .493.

Opposites and freshman English. r equals .261.

Completion test and freshman English. r equals .473.

Case School of Applied Science, Cleveland, Ohio

The following quotation is from a letter by Dean Theo. M. Focke:

I have never written any formal report on your tests, but at the end of the first term I compared the rank on the term's work with the rank

on the median score on your test and found a coefficient of correlation of $+.60$. We had also used the Army test and found a correlation of $+.48$.

Dean Focke also sent the following table:

AMERICAN COUNCIL ON EDUCATION TEST STANDING

<i>Scholarship Standing</i>	<i>1st quarter</i>	<i>2nd quarter</i>	<i>3rd quarter</i>	<i>4th quarter</i>
1st quarter.....	26	13	6	2
2nd quarter.....	11	16	9	9
3rd quarter.....	5	12	10	14
4th quarter.....	2	6	21	20

Central Michigan Normal School, Mount Pleasant, Mich.

Professors E. C. Rowe and James Vaughn reported that 100 students who had a percentile rank of .25 or below in the tests earned a total of 57.02 honor points, while 100 students who had a percentile rank above .75 earned a total of 228.65 honor points.

Connecticut College, New London, Conn.

Prof. F. E. Morris reports a coefficient of correlation of $+.36$ between median percentile rank in the nine tests of the 1924 edition and final year standing for 147 freshmen.

Cornell University, Ithaca, N. Y.

Prof. Paul J. Kruse has made a rather intensive analysis of the test results for several groups of students at Cornell University. Since his analysis is rather comprehensive, it is reproduced here in some detail. The table opposite is a summary of his correlations between test scores and average first term scholarship. While first term scholarship is never quite so stable as a full year's average scholarship and while the correlations for one semester are never so high as for a full-year criterion, they are reproduced here with the provision that interpretation of these coefficients should be adjusted in the light of the one semester criterion. It should be noticed that these coefficients represent separate test correlations. The composite or total scores or median percentile scores would probably give coefficients higher than

those for the individual tests. In general, it will be seen that the diagnostic value of tests Analogies I and Number Completion run lower than the coefficients for the other tests. In general, the two tests with the highest diagnostic value are Completion and Arithmetic in the data of Professor Kruse.

The criterion used by Professor Kruse was a weighted scholarship attainment. The numerical equivalent of the letter grade for each course was weighted by the number of hours credit. The average number of points for each student so weighted constituted his criterion. In his correlational analysis, three students with serious language difficulty were excluded. Since he did not work with the entire freshman classes, he selected random samples by including all the students in Agriculture and in Home Economics, the first 150 students, alphabetically, in Arts and Sciences, and in Engineering. Those students who left college during the first semester were not included in his correlational tables because for them there is no available criterion in the form of final grades.

DIAGNOSTIC VALUE OF SIX SEPARATE TESTS (1925 EDITION) AT
CORNELL UNIVERSITY

Correlations between Test Scores and Average First Term Scholarship

	Arts and Sciences		Agriculture	Home Economics	Engineering
	Men	Women	Men	Women	Men
(Number of cases).....	138	95	149	86	138
Completion.....	.37	.41	.38	.28	.42
Arithmetic.....	.44	.43	.32	.17	.44
Artificial Language.....	.34	.36	.30	.39	.28
Analogies I.....	.22	.29	.16	.24	.28
Number Completion.....	.23	.44	.30	.25	.18
Opposites.....	.34	.40	.29	.24	.31

Dickinson College, Carlisle, Pa.

The first three paragraphs following are quoted from a short article on "Intelligence Tests and Their Use at Dickinson" written by Dean M. G. Filler and published in the *Dickinson Alumnus*.

For two years we have at the invitation of the American Council on Education used a certain standard test with our Freshmen as soon as they have matriculated. We have then compared their college grades with the grades made in this test with results that have been both interesting and helpful.

The following table summarizes these results for last year's Freshman Class:

COMPARISON OF SCORES IN INTELLIGENCE TEST AND GRADES FOR
FRESHMAN YEAR

	Average for year					Dropped for poor scholar- ship	Left college for other reasons
	A	B	C	D	E		
1st Fourth of Class 38 Students..	5	15	10	5	..	.....	3
2nd Fourth of Class 38 Students..	..	9	14	12	..	1	2
3rd Fourth of Class 38 Students..	..	4	13	11	1	9	..
4th Fourth of Class 39 Students..	..	1	12	9	..	15	2
153	5	29	49	37	1	25	7

Thus it will be seen that every one of the five students securing the average of A for the work of the Freshman year was placed in the first fourth by the Intelligence Tests, that more than half the twenty-nine B students secured place in the first fourth; that all save one of those dropped for poor scholarship came from the lower half.

The scores of 27 students who dropped out of school were compared with the scores of 166 students who remained in school. A weighted score for the eight tests was used. The average score of those students who dropped out was 186.8,

while the average score of those remaining in school was 229.6.

Kalamazoo College, Kalamazoo, Mich.

Prof. E. B. Harper writes, "I obtained a coefficient of correlation of .43 between the first semester grades and the summed percentile ranks on the 8 tests. The letter grades used by the college were reduced to numerical equivalents and the Pearson coefficient calculated."

Marietta College, Marietta, Ohio

Prof. A. C. Watson reports that the correlation between test scores in the 1924 edition and scholarship standing at the end of the first semester was very nearly .70.

Meredith College, Raleigh, N. C.

Dean J. G. Bloomhour has furnished the following results of the 1924 edition of the Psychological Examination.

One hundred and forty students took the test, and a comparison was made of the scholarship records of the highest one-fifth and the lowest one-fifth according to test scores. The scholarship records are for the whole freshman year.

Highest 1/5 of the class—28 students

21 or 75 per cent pass 30 semester hours of work or more.

27 or 96.4 per cent pass 18 semester hours of work or more.

28 together make 814 semester hours or an average of 29.0 semester hours each.

Lowest 1/5 of the class—28 students

1 or 5.6 per cent pass 30 semester hours of work or more.

23 or 82.1 per cent did not make 18 semester hours, including those who discontinued before end of session.

16 or 57.1 per cent of those who remained for whole session did not make 18 semester hours.

28 together make 276 semester hours or an average of 9.8 semester hours each.

Michigan State Normal College, Ypsilanti, Mich.

Prof. T. W. H. Irion has given us a statement of the results of the test at the Michigan State Normal College. He used a sample of a few over one hundred cases, a random

sampling of the freshman class, and calculated Pearson coefficients of correlation. He reports three coefficients showing the predictive value of the test. Each represents the correlation between intelligence test scores and scholarship.

Intelligence test scores and academic scholarship ratings.58

Intelligence test scores and professional scholarship ratings. . . .48

Intelligence test scores and combined scholarship ratings.52

University of Missouri, Columbia, Mo.

The following quotations are taken from the Phi Delta Kappa Bulletin for April, 1926. The statements are a very brief summary of the results of two theses written in the School of Education. The studies were based on 893 cases, freshmen in the university.

The findings of Mr. Garnett would indicate that the Thurstone examination (meaning the American Council on Education examination) has a greater predictive value for the first semester than the teachers' marks for four years of high school work.

In his thesis, "An Attempt to Shorten the Thurstone Psychological Examination," Mr. Gum has found that three tests of the examination gave a higher correlation with university success for the first semester than the entire examination. The tests of high correlation are the linguistic tests—grammar, reading, and opposites.

New York University, New York City, N. Y.

A report on a study made by a graduate student on the predictive value of the American Council tests in the College of Arts and in the College of Engineering was submitted by Professor Douglas Fryer.

A group of 103 men was selected from a larger group of applicants by the Committee on Admissions, this acceptance being based on work in the American Council on Education examination, on the preparatory school record of the applicant, and on a personal interview with the committee. Withdrawals, failure to register, and similar occurrences cut the group to 81 men, the number considered in the study.

The following correlations were obtained:

Median Percentile in American Council on Education Tests and average grade in college for the first semester.....	+ .315
Arithmetic Test Scores and Grades in College Mathematics...	+ .204
Number Completion Scores and Grades in College Mathematics.....	+ .077
Absurdities Scores and Grades in College Mathematics.....	+ .236
Analogies II Scores and Grades in College Mathematics.....	+ .347
Arithmetic Scores and Grades in College Mathematics.....	+ .129
(for Engineering students only)	
Analogies II Scores and Grades in College Mathematics.....	+ .157
(for Engineering students only)	
Absurdities Scores and Grades in College English.....	+ .397
Completion Scores and Grades in College English.....	+ .321
Opposites Scores and Grades in College English.....	+ .353
Analogies I Scores and Grades in College English.....	+ .130
Analogies II Scores and Grades in College English.....	+ .374
Artificial Language Scores and Grades in Foreign Languages...	+ .187

While these coefficients of correlation are not very high, six of them are above +.30. High correlations are not to be expected in a selected group in which the applicants with low test scores have already been eliminated.

Oregon State Agricultural College, Corvallis, Ore.

Prof. G. F. Burch made a study of the predictive value of the separate tests, and the following results are taken from his report. The grade in the freshman course in electricity was used as a criterion, and the correlations obtained were:

Electricity grade and score in Estimating Test.....	.362
Electricity grade and score in Reading Test.....	.224
Electricity grade and score in Arithmetic Test.....	.208
Electricity grade and score in Reasoning Test.....	-.058
Electricity grade and score in Total Score Test.....	.305

University of Rochester, Rochester, New York

Prof. Z. Klain reports a correlation of +.426 between median percentile standing in the nine tests of the 1924 edition and college grade standing for thirty seniors.

Transylvania College, Lexington, Ky.

In a comparative study of the scores of men and of women in the 1924 edition of the test, Prof. Floyd W. Reeves found that "the superiority of the men in estimating ability and in arithmetic reasoning ability is outstanding, while that of

the women in artificial language, grammar, and other linguistic tests is also very marked."

Professor Reeves also made a study of the diagnostic value of the tests, and the section of his report concerned with this evaluation is given below:

An analysis of the data relating to the number of quality points earned by students and students' ranks on the psychological examination shows that the chances for a student classified in the upper quarter by the psychological tests to remain in the upper quarter on the basis of grades received, are about 50-50. However, the chances of the student classified in the lower quarter by the psychological test to be placed in the upper quarter on the basis of college grades are only 8 to 92.

Among the 25 students ranking highest on the psychological examination, 13 were also among the 25 students ranking highest in the number of quality points earned during the first semester, 8 were among the middle 50 per cent in number of quality points earned, and four were among the lower 25 per cent in number of quality points earned. Among the 25 students ranking lowest on the psychological test, only two were among the upper quarter of the class on the basis of quality points earned, while 11 were among the middle 50 per cent, and 12 were among the lower 25 per cent. Among the 50 students comprising the middle 50 per cent of the class, when grouped upon the basis of the psychological test, 11 were in the upper quarter of the class with respect to number of quality points earned, 29 were in the middle 50 per cent of the class, and 10 were in the lower 25 per cent of the class.

The relationship between quality points earned during the first semester at Transylvania College, quality points earned during the high school course, and rank on the intelligence test, are best represented in terms of coefficients of correlation. Six correlations were made by means of the Spearman Rank Method. The coefficients obtained were as follows:

1. High School grades and Psychological Test for both men and women..... $r = .07$
2. High School Grades and First Semester College grades for both men and women..... $r = .31$
3. Psychological Test and First Semester College grades for both men and women..... $r = .39$
4. Combined Psychological Test and High School grades and First Semester College grades for both men and women..... $r = .38$
5. Psychological Test and First Semester College grades for women only..... $r = .52$
6. Psychological Test and First Semester College grades for men only..... $r = .42$

Vanderbilt University, Nashville, Tenn.

Dean Walter L. Fleming has loaned a copy of a Master's dissertation in the Department of Mathematics on "The 1924 Intelligence Tests of Vanderbilt University." The thesis was written by Dewey S. Dearman. One section from the thesis and the table it discusses are copied here.

In Table XV are given two correlation coefficients, r' and r'' . The first is the coefficient between the results of the intelligence test and the total grade for college performance, and the second is the coefficient between the results of the intelligence test and the average grade for college performance. Each of these coefficients has been calculated and listed in the table for ten groups of twenty-five students each (except for the last which contains but fifteen) and for the total number of students submitting to the test. It is from these correlation coefficients that we must draw our conclusions.

Correlation Coefficients for Groups of Twenty-five and for Entire Group

Group	Number of cases	r'	r''
I.....	25	0.846	0.875
II.....	25	0.749	0.761
III.....	25	0.281	0.292
IV.....	25	0.349	0.363
V.....	25	0.356	0.369
VI.....	25	0.274	0.291
VII.....	25	0.436	0.385
VIII.....	25	0.595	0.588
IX.....	25	0.636	0.634
X.....	15	0.919	0.912
Total.....	240	0.613	0.622

(Only the part of the table relative to this discussion is quoted.)

These coefficients for the entire group are in the case of the total grade 0.613 and for the average grade 0.622. There is, therefore, a well-marked relation exhibited by these data between the results of the intelligence test and the results of university performance. Stated graphically we have a situation like this: If we plot the grade for the intelligence test on the x-axis and the grade for the university performance on the y-axis, we may expect to find the two hundred twenty five points so plotted grouped rather closely around a diagonal line. A study of the coefficients for the groups of twenty five reveals other facts concerning the clustering of these points about the above line.

It is noticed that in case of the total grade and of the average grade that the correlation coefficient is approximately 0.8 for the highest twenty-five and decreases to approximately 0.3 for the sixth group where it begins to increase until it is approximately 0.9 for the last group. This tells us that excellence in the intelligence test is followed by excellence in the university work, that inferior performance in the intelligence test is followed by inferior performance in university work, and that medium or fair performance in the intelligence test is followed by any degree of excellence in university work. We may expect, therefore, that along the lower part of our diagonal line the points will be grouped closely around the line. As the grade for the intelligence test increases we notice a divergence of the points from the line, finding them scattering, some above and some below the line until we reach the top where the points begin to cluster around it again. This diagonal is the line through the points as they would be located if the correlation coefficient were one, in which case the correlation would be perfect and positive.

Since we have calculated the values for the whole group and have not made use of samples picked at random we have a probable error which is negligible and is influenced only by the data and possible errors in the calculation of the various values, which checks and carefulness of computation have reduced to a minimum.

We conclude, therefore, that there is a well-marked correlation between results of the intelligence test and results of university performance. This interdependence is more marked in the case of excellent and inferior than for average performance.

This rather unusual analysis with the curious shifts in correlation can probably be at least partly accounted for by the fact that the criterion range is considerably restricted in the middle portions of the distribution. When a group of students is divided into ten *equal* subgroups by either variable it is expected that the extreme subgroups will cover a wider range and that the coefficients of correlation will be higher in the extremes than in the middle range.

University of Virginia, University, Va.

Prof. George O. Ferguson made a careful study of the relation between scores in the 1924 edition of the Psychological Examination and academic success. His report to the faculty was published in the University of Virginia Record Extension Series. The main results of his study are summarized in the following tables and paragraphs:

PSYCHOLOGICAL EXAMINATIONS

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	<i>N</i>	<i>r</i>
Psych. Exam. and Avg. College Grade, 1st term (trimester).....	391	0.57
Psych. Exam. and Number of term-hours passed, session. 397		.50
Psych. Exam. and Grade in College Chemistry, 1st term. 141		.41
Psych. Exam. and Grade in College Mathematics, 1st term.....	183	.45
Psych. Exam. and Grade in College French, 1st term....	86	.51
Psych. Exam. and Grade in College English, 1st term, ...	322	.63

Score on the psychological examination was the median of the percentile ranks on the eight tests given.

For comparison with the coefficients given above, the following were obtained:

	<i>N</i>	<i>r</i>
Avg. High or Prep. School Grade and Avg. College Grade 1st term.....	369	0.34
Avg. High or Prep. School Grade and Col. French Grade 1st term.....	84	.19
Avg. High or Prep. School Grade and Col. Math. Grade, 1st term.....	175	.22
Avg. High or Prep. School Grade and Col. English Grade, 1st term.....	302	.30
Avg. High or Prep. School Grade and Col. Chem. Grade, 1st term.....	133	.35
Avg. Prep. Grade in English and Col. Grade in English, 1st term.....	321	.35
Avg. Prep. Grade in Math. and Col. Grade in Math., 1st term.....	238	.25
Avg. Prep. Grade in Science and Col. Grade in Science, 1st term.....	247	.25
Avg. Prep. Grade in English and Avg. College Grade, 1st term.....	366	.27

Successive terms' work in the same course:

	1st and 2nd terms		2nd and 3rd terms	
	<i>N</i>	<i>r</i>	<i>N</i>	<i>r</i>
Mathematics.....	161	.58	129	.63
French.....	125	.64	110	.69
English.....	293	.66	310	.62
Chemistry.....	175	.77	149	.57

The median number of term (trimester) hours passed during the session by the students (approximately twenty) in each five-point interval of percentile rank on the psychological examination, was as follows (in making this computation, the medians of the percentiles on the eight tests of the examination were themselves reduced to percentiles):

Percentile rank	Term-hours passed	Percentile rank	Term-hours passed
95	46.5	45	31.0
90	41.0	40	30.6
85	41.0	35	23.0
80	43.8	30	28.0
75	40.0	25	21.7
70	37.5	20	19.5
65	32.4	15	20.2
60	28.5	10	19.5
55	31.5	5	10.5
50	28.5	0	3.0

The record of the forty-three students with percentile ranks below 10 was as follows in the first term (trimester): Four withdrew before the end of the term; twenty failed on all courses; ten passed one course each; six passed two courses each; three passed three courses each; none passed on all courses.

Wesleyan University, Middletown, Conn.

The following paragraphs are quoted from a report by Prof. H. B. English published in the February, 1927, issue of the *Wesleyan University Alumnus*.

One must not expect too much of intelligence tests here. A moment's reflection shows how complex are the factors which determine whether a man shall succeed in college. But it is instructive to see what sort of intelligence rating is made by those who do in fact fail. Of the nineteen men dismissed for low scholarship, four were rated *E* by the tests, three *D*, five *C*, and one *B*. It is interesting to note also the ratings of those who withdrew from college either voluntarily or for disciplinary reasons. Three got *E*, one *D*, three *C*, and one *B*. This is virtually the same distribution as for those dismissed for low scholarship. Of the other students rated *E* on the tests, two got a *C*-average in college and one got *D*. Thus of those rated *E*, by the tests, only a fifth finished the year in good standing.

While this does not indicate that all flunkers are of low intelligence (which no one believes) nor that all of relatively low intelligence will become flunkers (which no one ought to expect), it does indicate that if we center our effort upon getting men of high intelligence, we shall lower the "mortality" very considerably.

Agreement of the test ratings with academic record may also be seen from the following table. It may be assumed that a student whose average scholarship is *B*— is decidedly satisfactory from that angle, that one whose average is *C*— is reasonably satisfactory, while one whose academic average is *D*+ or worse is unsatisfactory. (Note that one speaks here only of academic standing; no effort is being made to take account of other important qualities.)

It is again apparent from the table that we are not ready to make a student's intelligence test score the measure of his fitness for college. Yet when we notice that 25 per cent of those who do poor work are persons with low test ratings while only 4 per cent of those who do good work have such a rating, one wonders whether the tests could not be made, not indeed the *sole* criterion, but an important criterion to be used *in connection with and in addition to* existing methods of selection.

Psychological Ratings Compared with Grades in the Freshman Year 1925-1926		Ancient Languages	Biology	Chemistry	English	Ethics	History	Mathematics	Modern Languages	Physics	All Subjects
1.	% of low testers getting D+ or less....	50	40	19	60	25	46	55	36	67	50
2.	% of low testers getting C- or better....	50	60	81	40	75	54	45	64	33	50
3.	% of low testers getting B- or better....	12	10	9	6	0	4	4	18	0	3
4.	% of high testers getting D+ or less....	12	22	15	30	20	25	33	20	14	21
5.	% of high testers getting C- or better....	88	78	85	70	80	75	67	80	86	79
6.	% of high testers getting B- or better....	50	44	33	39	20	23	33	29	56	33
7.	% of low graders having low test score....	50	25	18	32	25	23	33	22	25	25
8.	% of low graders having high test score....	19	12	15	20	25	16	20	14	12	14
9.	% of high graders having low test score....	7	14	8	6	0	6	4	14	0	4
10.	% of high graders having high test score....	50	57	33	53	100	50	40	33	40	54
11.	% of poor students who would be eliminated if all low testers were eliminated....	50	25	18	32	25	25	33	22	25	25
12.	% of good students who would be eliminated if all low testers were eliminated....	7	14	8	6	0	6	4	14	0	0
13.	Average test score of those electing various courses. Scale based on % C ranks....	59	49	50	53	53	52	52	52	60	0
14.	Number of students in each subject....	75	39	64	172	31	132	134	165	26	171

Explanation:

- (A) A low grader is one whose average in scholarship is D+ or worse.
 (B) A high grader is one whose average in scholarship is B- or better.
 (C) A low tester is one whose intelligence rating puts him in the lowest fifth of the class.
 (D) A high tester is one whose intelligence rating puts him in the top quarter of the class.

Wilson College, Chambersburg, Pa.

Pearson coefficients of correlation were computed for several tests of the 1924 edition and scholarship.

Correlation between English grades and the Grammar test....	+.82
French grades and Artificial Language.....	+.432
Latin grades and Artificial Language.....	+.187
English grades and Opposites.....	+.654
Correlation between English grades and the average of all the tests.....	+.560
Latin grades and the average of all the tests.....	+.445
French grades and the average of all the tests.....	+.710
Correlation between the average grades for college work and the average of all the tests.....	+.595

Winona State Teachers College, Winona, Minn.

Prof. W. A. Owens made a study of equivalent scores in the American Council on Education examination and the Army Alpha Test. This procedure was possible because both tests had been given to the same individuals. As a result of the equating process, "equivalent" scores were obtained which in this case were American Council Test scores in terms of Alpha scores. The "equivalent" scores and those actually obtained in the Alpha Test were not always the same for the same individual and these differences or discrepancies were further studied. Since the American Council Test was longer and admittedly more difficult than the Army Alpha, differences in favor of the "equivalent" score were interpreted as meaning greater staying qualities, and the group having such differences was called "motivated." Where the actual Alpha scores were higher than the "equivalent," the group was called "under-motivated."

An examination of the scholastic grades of all students having discrepancies of either sort showed that 62.8 per cent of them performed as the discrepancy indicated. Thus the "motivated" group had higher scholastic grades than would have been predicted on the basis of the actual Alpha scores using norms previously established at Winona. Likewise the "under-motivated" group had lower scholastic grades than would have been predicted.

The American Council tests thus seem to give improved predictability, probably due to the demand for purpose and sustained effort.

It is of some interest to examine the equivalent scores, which are given in the following table:

Percentile	Army Alpha	A. C. E.	Percentile	Army Alpha	A. C. E.
100.....	200	99.83	49.....	140.40	52.23
99.....	185.55	94.25	48.....	139.87	51.72
98.....	178.83	91.00	47.....	139.04	51.21
97.....	175.49	88.20	46.....	138.20	50.70
96.....	174.02	85.60	45.....	137.37	50.19
95.....	172.84	84.13	44.....	136.54	49.60
94.....	171.66	82.95	43.....	135.70	48.95
93.....	170.48	81.82	42.....	134.89	48.30
92.....	169.42	80.69	41.....	134.18	47.65
91.....	167.44	79.62	40.....	133.47	47.00
90.....	167.46	78.66	39.....	132.76	46.35
89.....	166.48	77.70	38.....	132.04	45.70
88.....	165.51	76.74	37.....	131.34	45.05
87.....	164.58	75.77	36.....	130.62	44.50
86.....	163.73	74.88	35.....	129.92	43.95
85.....	162.87	74.16	34.....	129.13	43.41
84.....	162.01	73.44	33.....	128.35	42.87
83.....	161.15	72.72	32.....	127.58	42.12
82.....	160.29	72.00	31.....	126.77	41.79
81.....	159.54	71.27	30.....	125.98	41.25
80.....	158.85	70.55	29.....	125.19	40.70
79.....	158.16	69.85	28.....	124.37	40.16
78.....	157.47	69.21	27.....	123.54	39.57
77.....	156.77	68.58	26.....	122.70	38.95
76.....	156.08	67.95	25.....	122.87	38.33
75.....	155.39	67.31	24.....	121.04	37.71
74.....	154.71	66.68	23.....	120.20	37.09
73.....	154.05	66.04	22.....	119.21	36.47
72.....	153.40	65.41	21.....	118.16	35.85
71.....	152.74	64.78	20.....	117.11	35.23
70.....	152.08	64.14	19.....	116.06	34.60
69.....	151.42	63.51	18.....	115.01	33.95
68.....	150.76	62.87	17.....	114.06	33.30
67.....	150.10	62.24	16.....	113.12	32.65
66.....	149.48	61.36	15.....	112.17	32.00
65.....	148.86	60.97	14.....	111.23	31.35
64.....	148.24	60.34	13.....	110.28	30.70
63.....	147.63	59.47	12.....	109.05	30.05
62.....	147.01	59.19	11.....	107.70	28.80
61.....	146.39	58.63	10.....	106.35	27.50
60.....	145.78	58.08	9.....	105.00	26.20
59.....	145.16	57.53	8.....	102.65	24.91
58.....	144.65	56.97	7.....	100.28	23.78
57.....	144.18	56.33	6.....	98.22	22.65
56.....	143.71	55.87	5.....	96.16	21.52
55.....	143.23	55.31	4.....	94.10	20.39
54.....	142.76	54.78	3.....	91.92	18.78
53.....	142.29	54.27	2.....	88.90	16.92
52.....	141.82	53.76	1.....	81.67	15.08
51.....	141.34	53.54			
50.....	140.87	52.74			

The College of Wooster, Wooster, Ohio

The following paragraphs are quoted from a letter of Prof. Martin Remp:

We made a study of the relation between the scholarship marks of the first semester and the test ratings.

The percentile rank of the student on the nine tests combined was used as the rating in the psychological examination.

A scholarship index was used for the scholarship rating. Each hour or work in *A* was given 4 points; *B*, 3 points; *C*, 2 points; *D*, 1 point; *E* and *F*, no points. The total number of points divided by the number of hours carried gives the index.

The Pearson coefficient of correlation is .52.

A study of decile deviation was also made to determine to what extent students differ in relative position in the two ratings. The 270 students were divided into ten equal groups according to test rating; also into ten groups according to scholarship rating. Group 1, the poorest tenth; group 2, the next tenth; group 10, the best tenth.

48 scores have no deviation. (Are in the same tenth in both.)

75 scores have deviation of 1.

57 scores have deviation of 2.

This accounts for two-thirds of the scores. The remaining third scatter as follows:

29 scores have deviation of 3.

28 scores have deviation of 4.

11 scores have deviation of 5.

12 scores have deviation of 6.

8 scores have deviation of 7.

2 scores have deviation of 8.

L. L. THURSTONE.

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AMERICAN COUNCIL ON EDUCATION

The Tenth Annual Meeting

THE Tenth Annual Meeting of the American Council on Education was held on Friday and Saturday, May 6-7, 1927, in the building of the National Research Council, Washington, D. C. The meeting was called to order at 10 a. m., Dean Virginia C. Gildersleeve in the chair.

After reading and approval of the minutes of the Ninth Annual Meeting, reports were presented by the Executive Committee and by the Treasurer. These reports are printed in full in the following pages.

Dr. J. H. MacCracken, Chairman of the Committee on Federal Legislation, reported that this committee had held one meeting during the year to consider recent developments in the matter of government as related to Education. Signs are not wanting that the prestige of parliamentary government is declining and the tendency to centralized control increasing. Times are restless, and many are seeking some device of government that is as far ahead of our present system as it was ahead of its predecessors one hundred and forty years ago.

In education this restlessness in governmental matters centers about the Education Bill. Progress in comprehending and defining the problem has been made through organized debates by high school students, through extended hearings before congressional committees, and through awakening of State Teachers Associations to fuller understanding of the real questions involved. The U. S. Chamber of Commerce has recently appointed a new committee to study the matter. The expanding work of the Department of Commerce in simplified practice is gradually educating business men in a new technique of decentralized responsibility with central cooperation. This technique is an antidote to centralization of control in Washington and is quite as applicable to education as it is to business.

The Curtis-Reed bill to establish a Department of Educa-

tion but without Federal subsidies will doubtless be reintroduced into the next Congress. Both political parties will probably have to face this question at the coming election. Perhaps as we grow older we shall all grow wiser until we come to see that war and wealth are not the only brands of cement that may be specified for building a united nation.

Dean H. E. Hawkes, Chairman of the Committee on Personnel Methods, briefly traced the growth of the work of this committee for the past five years. Because the problem is elusive, it required over two years to formulate a definite plan both for organizing the committee and for its work. Finally, in the fall of 1925 a grant of \$8,500 was made by Mr. John D. Rockefeller, Jr.'s Benevolent Fund to enable the committee to make a survey of conditions in fourteen universities. President L. B. Hopkins' report on Personnel Procedure in Education, published last autumn, was the result.

This report makes clear that there is the widest possible variety of personnel practices in the several institutions studied. The universities are not yet talking a common language on the subject. Therefore, the committee applied for a further subvention that would enable it to establish a center of information through which institutions may keep posted on new developments, and which may also serve to develop cooperative experiments in this field. A new grant of \$20,000 a year for three years has just been made by Mr. John D. Rockefeller, Jr., for support of this program. The office of the American Council on Education will be made the center of information, and four cooperative experiments are planned.

The four topics for these experiments are personal record cards, achievement tests, rating scales, and vocational monographs. A small committee of experts is being appointed to operate each of these experiments under supervision of the central committee. These committees will meet July 1-2 to organize and start the work. The general plan of action is

thus described in the letter to the Council stating the objectives of the grant:

We understand that the Committee is satisfied that the next important step lies in the direction of making available to personnel workers, not only in the colleges but in schools and industries, such record forms, test forms and other instruments of measurement as have been sufficiently tried by competent specialists to warrant further, more extensive trials. We understand that the Committee believes that there are at least four phases of personnel practice in which sufficient preliminary experimentation has been done to make it possible to produce dependable model forms and instruments of measurement which can be relied on to give dependable results and which will be of great value in revealing the intangible aspects of personnel work.

This work started informally as voluntary cooperation among fourteen institutions. Because it is obviously of general interest and application, it has been taken over by the American Council on Education. All members of the Council are invited to participate in the coming cooperative experiments and to make free use of the central news service which is now being developed.

Industrial cooperation was the theme of an address by Mr. J. W. Dietz of the Western Electric Company. Mr. Dietz represents the American Management Association, which joined the Council last fall to help develop close cooperation between colleges and industry in solving their common problems of personnel and training. He first traced the evolution of present business and industrial philosophy concerning education. Fifteen years ago the National Association of Corporation Schools was organized around the idea that there are educational problems in industry. That association met annually as a national group to discuss primarily apprentice schools maintained by corporations. In a few years it outgrew the original idea and became the National Association for Corporation Training, with sections in various parts of the country for more intensive local discussion of all phases of training for industrial life. After the war it merged with the Industrial Relations Association, forming together the National Personnel Association. Finally, realizing that it must deal in a unified way

with all of the human elements in business, it became the American Management Association.

This evolution of the Association was the outer expression of an inner growth in philosophy of business and industry. The most interesting feature of this growth has been the discovery of the importance of the individual in industry. This conception has developed gradually in connection with health programs, safety campaigns, savings plans, stock ownership systems, educational opportunities, and sports. Through these practical experiences in helping individuals help themselves, industry is learning how to liberate individual talent and is evolving a real democratic philosophy of business. We are also coming to believe that education comes about in industry through having specific things to do.

This evolution in industry has paralleled the evolution in education. Schoolmen also have discovered the importance of the individual. Therefore we have a common problem in dealing with the individual. We mutually recognize the folly of either presuming to tell the other how to do his job. We are now ready to start on a new basis. We will report to you significant facts concerning the requirements of industry. We will trust you to interpret and apply them wisely. We ask you in turn to report to us significant facts about personnel and training along the lines of Dean Hawkes' report, and to have confidence that we will interpret and apply them to our mutual benefit.

Following these reports on Federal Legislation, Personnel Procedure, and Industrial Cooperation, the Director's report, as printed in subsequent pages, was presented. It indicates how the varied activities of the Council are really phases of a program of decentralized responsibility with central cooperation for the purpose of discovering and developing human talent and capacity in every possible way.

Dr. C. H. Judd presented a brief analysis of the recent Report of the Consultative Committee of the London Board of Education on the Education of the Adolescent. The document is significant in America both because of its con-

tent and because of the manner in which it was developed. Dr. Judd's discussion of the matter will be printed in a later issue of the EDUCATIONAL RECORD.

The Chairman appointed Dean A. L. Jones, chairman, Miss Eleanor Boswell, and President G. F. Zook, to serve as a nominating committee. The morning session adjourned.

The keynote of the afternoon session was struck by the chairman in her address on Foreign Light on American Education. This is printed in full in subsequent pages. The other topics considered were the Modern Foreign Language Study, and the Organization of International Educational Relations.

Professor J. P. W. Crawford, acting chairman, presented the report of the Committee on the Modern Foreign Language Study in the United States. The work of this committee is nearing completion. Three volumes of its report are now in press. One of these deals with statistics of the subject from 18,000 high schools. Tables show the percentages of students studying modern foreign languages in different states and in various types of school. Similar data are given for teachers. A second volume contains results of the investigation into courses offered and designed for preparation of modern foreign language teachers. Another volume presents the findings of the experiments by Professor Ben D. Wood. New type tests were given to some 80,000 high school students and the results compared with those of old type examinations.

Other volumes in preparation deal with the investigations of Professor Henmon concerning the construction and administration of objective and comprehensive tests for measuring achievement at the various levels of instruction and by various methods. The testing campaign and other special studies afford a basis for a volume on curriculum by Professor Algernon Coleman of the University of Chicago. This report centers about objectives and discusses test results for various semesters, length of course, achievement at various ages, kind of grammar and reading to be intro-

duced at various levels. Professor Buswell has applied to reading modern languages methods already employed in determining reading habits in English. Other topics treated are the relationship between progress in language learning and mental ability as determined by mental tests, prognosis tests and sectioning of classes according to ability, post-scholastic use of foreign languages by high school and college graduates, the requirement of a reading knowledge of French and German for candidates for the degree of Doctor of Philosophy, the relation of progress in modern language study by students in high school and college, idiom and syntax frequency, and word frequency.

Members of the Council will receive copies of the several volumes of the report as soon as issued. Further copies can be purchased from the Macmillan Company.

For the Canadian Committee on Modern Languages, Professor Milton A. Buchanan of the University of Toronto presented a report of progress. The General Committee will hold its final meeting in September. The use of the same objective tests in Canada and in the United States has revealed some interesting facts concerning results of foreign language teaching in the two countries. Thus, in French, excluding the Province of Quebec, the American schools gain on Canadian schools in the first two years. In vocabulary there is a slight gain also in the third and fourth years. In grammar the Canadian schools show slightly greater progress in the third and fourth years and, in comprehension of silent reading, a gain of one test unit over the American schools in the fourth year. In none of the three tests, however, do they overcome, even by the end of the fifth year, the initial lead of the American schools. Spanish tests have been more favorable to Canadian schools, but the numbers have been too small to warrant comparisons or justify a study of the causes of apparent superiority.

Because of a deficiency in library facilities for supplementary reading, the Canadian Committee has prepared a list of interesting foreign books suitable for pupils of high school age. Libraries, with a few exceptions, are inadequate

for investigation and instruction. Only one university is well enough equipped in books and periodicals to carry on graduate work with profit. For admission to professional schools the universities in general require two languages. An exhaustive report on the training of modern language teachers has been prepared by one member of the committee. Provincial Departments of Education are offering bursaries to teachers who wish to study abroad, and one university allows grants of \$600 toward traveling expenses during summer vacation of three modern language teachers each year.

The Committee has completed "A Graded Spanish Word Book," based on a count of 1,200,000 words, and ranking 6,000 words according to their importance. A history of the teaching of modern languages by provinces dealing with origins about 1820, curricula, textbooks and examinations will be ready in October. A bibliographical study of the psychology of learning modern languages, a joint undertaking with the United States committee, will be ready during the summer.

Dr. S. P. Duggan, Director of the Institute of International Education and Secretary of the Committee on the American University Union, told of the ever-increasing work of these two organizations in handling international exchange of students and professors. This work consists not only in answering numerous inquiries of all sorts concerning educational facilities for foreigners here and for Americans abroad, but also in administering an ever-increasing number of scholarships and fellowships for foreign study. The Institute issues a list of such American fellowships as are open to foreigners and of those open to Americans desiring to study abroad. Much attention has also been given this year to the development of a National Federation of Students to cooperate with similar organizations in Europe, to conference with groups planning student tours abroad, and to helping foreign students and professors in meeting the requirements of the immigration laws.

The University Union offices in Paris and London are more and more useful to Americans abroad. The presence

of a biologist as Director of the Paris office has enlarged the contacts of the office with scientists in France. Progress has also been made in interesting Americans in providing for an American building at the Cité Universitaire. The visit to the United States of Dr. H. S. Krans, Associate Director of the Paris office, has been useful in developing closer cooperation between Paris and New York. It is hoped that Mr. R. H. Simpson from the London office may make a similar visit here next year.

The Institute is glad to report that the Carnegie Corporation has increased its grant for support of the Institute from \$30,000 to \$50,000 a year for two years. This increase makes it possible for the Institute to carry the growing load. Both the Institute and the Union are in hearty accord with the plan outlined in the Report of the Executive Committee as presented at the morning session. A strong central agency of cooperation in international educational activities is sorely needed, not only in America, but in each foreign country as well.

The progress of the American National Committee on International Intellectual Cooperation was reported by the Secretary, Dr. Vernon Kellogg. After sketching the history and organization of the Committee on Intellectual Cooperation set up by the League of Nations, the establishment in 1925 of the International Institute of Intellectual Cooperation in Paris, and the appointment of national committees in thirty-two countries, Dr. Kellogg explained the organization of a small American National Committee, representative of our major intellectual interests. An account of the first meeting of this committee was printed in the EDUCATIONAL RECORD for January, 1927. At the third meeting of this Committee, April 5, 1927, it adopted the following resolution:

Resolved: That the American National Committee suggests to the International Committee on Intellectual Cooperation that it should consider whether the benefits of study abroad would not be greatly increased if each nation affording facilities for foreign students and teachers within its borders would establish, by public or private enterprise a central office whose functions would be,

(a) To assist foreign students in finding and getting access to the educational facilities or research materials they seek;

(b) To help its own nationals find the educational opportunities they seek abroad;

(c) To keep corresponding offices in other countries informed concerning all phases of national education of interest to foreigners.

To respond effectively to inquiries about American intellectual life, the Committee has established headquarters at the National Research Council and appointed a part-time executive secretary, Dr. J. David Thompson. Such inquiries have included a program for an annual survey of intellectual statistics covering elementary, secondary, university and technical education, learned societies, museums, libraries, archives, publishing, theaters, concerts, motion pictures, radio, inventions, and the liberal professions; a plan for an International Who's Who; a survey of post-graduate fellowships; cooperative studies of common national problems.

The Assistant Director of the Council, David A. Robertson, traced the early work of the Council in encouraging international cooperation in educational matters through development of a uniform American policy toward foreign degrees, through preparation of lists of degrees recommended to foreign universities, and through comparative evaluation of American, French, Latin-American and British degrees. This early work led to the formation of criteria by the Committee on Standards and acceptance of these criteria by important associations in 1919, with the result that foreign educational authorities have been able to accept these unified standards instead of those erected by seventy-two standardizing organizations in 1919. The forthcoming Handbook of American Universities and Colleges has been edited primarily for those of other countries who desire to know the facilities for higher education in the United States.

The present relations of the American University Union, the Institute of International Education and the American Council on Education were established in 1924. They have proved a useful intermediate step while the problem was

studied and plans for a simpler and more permanent organization were developed. The need for simplification of machinery was emphasized by the publication in the EDUCATIONAL RECORD, April, 1925, of a list of 115 organizations related to the field of international education. In Paris, London, Rome, Berlin, Prague, Vienna and other centers, there are also numerous uncoordinated American agencies. The situation was considered at several conferences abroad and at home and a joint memorandum on the subject was formulated by a committee of the Union and published in January, 1926 (EDUCATIONAL RECORD, Volume III, page 46). This was followed by a conference of American organizations called by the Council at the National Research Council on May 5, 1926. Further conferences by committees have finally led to the plan mentioned in the Executive Committee Report this morning. To hasten the realization of this simplified plan, the Council has already turned over to the Institute of International Education the administration of both the Franco-American Exchange and of the undergraduate scholarships for foreign travel and study. As a final step so far as the Council is concerned, the Executive Committee recommends to the Council that it transfer to the Institute the administration of the American University Union. With the increased grant now available, this will tend to make the Institute a real center of cooperation through which international educational relations may be simplified and made more effective.

This consolidation of international educational interests in one center in America is based on a positive answer to the question propounded by The American National Committee on International Intellectual Cooperation and forwarded for consideration to the League of Nations Committee on Intellectual Cooperation. It is with the hope that other international agencies in America will come into closer cooperative relations with the Institute, and that this example here may influence other nations to develop unified national headquarters for international educational exchanges that the Council is turning over to the Institute of

International Education responsibility for the administration both of scholarships and of the American University Union offices abroad.

The new plan helps to clarify the respective functions of the Institute and the Council. For the interests of the Council are primarily educational and scientific and for the betterment of American education rather than primarily for the encouragement of international friendship. The Council must inevitably keep informed concerning educational movements abroad and must distribute reports of its own work abroad whenever interest in them is manifested. Such exchange of experience with methods and processes of education give to the Council in its consideration of national problems a point of view. This is admirably illustrated today in the address by the Chairman.

International relations have been a powerful influence in the Committee on Standards in setting up objective criteria intelligible to foreign educators. They have been a daily stimulus in the preparation of the volume on American Universities and Colleges. Whenever American education is studied by foreigners who are seeking scientific truth on such matters as personnel procedure, industrial relations, modern foreign language problems, even majors and minors and semester hours, the values of these things change helpfully. The new organization of international educational relations liberates the American Council on Education from executive duties that hamper its real work and opens the way to make a true contribution to organization of effective international educational exchanges in the interest of international good will.

The chief topic of the Saturday morning session was Recruiting and Training of College Teachers. The subject was presented by Dean O. E. Randall, Chairman of the Commission of the Association of American Colleges on this problem. The first report of that commission is printed in the Bulletin of the Association of American Colleges for April, 1927.

The commission has found that colleges are vitally in-

terested in this question. Replies from 300 colleges showed that very little attention is given in graduate schools to preparing young men and women to teach. Scholarship and mastery of subject matter have been the chief aims. The public also does not appreciate the significance of the vital service college teachers render. Salaries are so low and recognition of the value of his work so lukewarm that teaching cannot compete long with other professions for the best talent.

There is wide diversity of opinion as to what training is desirable for those who wish to teach. All agree that he must possess those subtle personal traits which make young people trust and respect him. It is doubtful if a graduate institution fashioned after schools of pedagogy will be of real service here. It might do more harm than good. Graduate schools are indifferent, if not hostile, to making provision for development of the most important element of success as a teacher.

That there may be cooperation between graduate schools and colleges in this matter, the Association of American Universities has appointed three delegates to the Commission of the Association of American Colleges. The commission is inclined at present to look to some form of self-instruction in teaching directed by the faculty of each institution. Older teachers should visit classes and give younger teachers help and kindly suggestions. A sort of apprentice training on the job may be useful. Some central organization might formulate and distribute outlines for successful experiments in teaching or a carefully prepared program of procedure which a faculty might follow in such experimentation and study. This task is of sufficient importance to warrant creating a special organization to do this if no existing organization will and can do it.

The commission has formulated six questions which it submits with the request that some organization with adequate facilities answer them. These are:

First: What proportion of college graduates during the period from 1921 to 1926 entered graduate schools with the intention of preparing for college teaching?

Second: During this same period what proportion of the highest ranking graduates—say in the upper quarter of the graduating classes—selected teaching as a profession?

Third: What proportion of college graduates possessing in addition to scholarship highly desirable personable qualities chose teaching as a profession?

Fourth: Is there reason to believe that a smaller proportion of graduates of high scholastic standing and possessing exceptional personal qualities are taking up college teaching now than before 1917?

Fifth: Can some organization make a careful study of the economic conditions in the teaching profession with the view of ascertaining whether the profession is made sufficiently attractive to win the most desirable candidates?

Sixth: Is it worth while to ask Professor Thorndike to bring his study of Phi Beta Kappa men up to date with the view of ascertaining what proportion of Phi Beta Kappa men enter the profession of teaching?

The discussion was continued by Dean W. E. Smyser, Chairman of a committee of the North Central Association on this subject. Dean Smyser presented a report which had been presented to the North Central Association in March and is printed in the June number of their quarterly. The committee believes that at present it would be futile to recommend a blanket requirement of a number of hours of professional training for college instructors, both because men who could give the instruction are not available and because we have not yet enough factual information about college education to justify such courses. A questionnaire answered by 150 college teachers led to the following conclusions:

First: The typical teacher of freshman and sophomore college students has had little professional training for his work other than the study of the subject which he essays to teach.

Second: He is aware of meeting in the course of his work many educational problems in which he has had no formal training.

Third: He has confronted all these problems and some others in attempting to clarify his mind about educational issues.

Fourth: In spite of the little training he has had and his seven years of experience, he still finds about four-fifths of his problems unsolved.

Fifth: In about two-thirds of his problems he thinks he could have been helped by formal course instruction and is disposed to advise such

professional training for graduate students preparing for college teaching.

Another questionnaire addressed to college administrators elicited the fact that college administrators have little sympathy with professional training of college teachers either before or after employment. Yet they desire vaguely that college instruction be improved. An analysis of the careers of all Doctors of Philosophy of the University of Chicago shows that 80 per cent have entered the teaching profession. The final summary of the study is stated as follows:

First: College administrators at the present time do not recognize professional training in education as a determining qualification for eligibility to appointment as an instructor in a college. There is some recognition of such training as a desirable supplementation to an otherwise qualified candidate.

Second: Graduate schools in the Association of American Universities do not, in general, make provision for professional training in the curricula leading to graduate degrees. Indifference to the need for such training is all but universal in these schools which aim to train their students for academic scholarship and productive research, even though the records show that such students are headed toward college teaching as a career. However much they may decry the obvious implication of available facts, graduate schools are clearly teachers colleges but as such they appear indifferent, if not hostile, to one element of a teacher's preparation which is now universally accepted as a requisite for a teacher's certification at every educational level below the college.

Third: Despite the indifference of college administrators and graduate schools to the claims of professional training, there is a clear recognition on the part of college instructors that such training in formal courses would be useful. These instructors find themselves confronted with difficult problems which academic training, intellectual ability and experience do not enable them to solve. They, therefore, feel the need for the formal consideration of these problems in courses prior to the time of appointment as college instructors, and would recommend the offering of such courses to graduate students.

Conditions are improving. Various professional associations are making studies of teaching methods in their special fields such as mathematics, classics, foreign languages. Universities are organizing faculty committees to study educational operations and results, as, for example, at Minne-

sota. The committee is continuing its work by further collection of information, by compiling a bibliography on the subject, by trying to persuade college administrators to recognize teaching ability when assigning instructors to freshmen and sophomores, and by trying to persuade deans of graduate schools that colleges need not merely scholars but scholars who can teach.

The committee is glad to cooperate with Dean Randall's commission and joins it in hoping that the American Council on Education or the Bureau of Education or some competent central agency will undertake to serve as a central news service and center of cooperation in this work. It is also their hope that a conference of all interested in this problem may be called in the fall to outline a sound program for united attack on the problem.

Miss Eleanor Boswell, Executive Secretary of the American Association of University Women, presented a report of a committee of that association on the related subjects of appointment, promotion, and tenure of college teachers. Several years ago this committee was impressed by a study made by Smith College of its own conditions with regard to this matter. As a result a plan for a cooperative study was formulated and submitted to the American Council on Education with recommendation that the Council undertake the work. The questions which this plan propounded for solution were:

1. In determining promotion in a college faculty, either in position, or in salary, what should be the relative value given to teaching ability, productive scholarship, and administrative service, and what other factors should be considered?
2. What are the best evidences of productive scholarship?
3. How is teaching ability objectively tested?
4. Should length of service be given recognition?
5. What kind of record of the ability and of the achievements of its faculty members should a college keep?
6. What should be the procedure for determining promotion? Should promotion depend upon the recommendation of one's immediate superiors in the department? What is the place of a faculty committee on promotion, and what should be the relation of this faculty committee to the board of trustees?

It was proposed that these questions could be answered if a number of colleges would follow the example of Smith and each make for itself factual studies of its actual practices in this matter, submitting such results as it was willing to publish to a central committee. This proposal is still of interest to the American Association of University Women. At the meeting last month the committee on standards of appointment and promotion again urged that the American Council on Education undertake this work and pledged hearty cooperation in a joint undertaking of this sort. Therefore, on behalf of the American Association of University Women, Miss Boswell urged that the American Council on Education appoint a committee to secure cooperation of all interested in a united attack on this problem.

These reports from three associations were followed by a lively discussion of the whole subject. It was pointed out that there were two chief obstacles to organizing a cooperative attack on this problem, namely, the cost of such an enterprise, and the vagueness of the problem. At the close of the discussion the Council voted that the question of organizing a cooperative study on Recruiting and Training College Teachers be referred to the Executive Committee with power.

The report of the Nominating Committee was called for and presented by Dean Jones. The Secretary was instructed to cast the ballot of the meeting for the officers nominated, and they were declared duly elected. The list is printed on page 241 of this number of the RECORD.

The following resolutions were passed by the Tenth Annual Meeting:

Resolved, That the American Council on Education deeply mourns the loss of a wise leader and beloved friend, Harry Pratt Judson, president Emeritus of the University of Chicago, Chairman of the American Council on Education from 1919 to 1921 during a difficult period of adjustment after the war, and for several years Chairman of the Committee on the American University Union; and

Resolved, That the American Council on Education herewith expresses its recognition of his notable service to this Council, to education, and

to the Nation, and extends heartfelt sympathy to his family and to the University of Chicago.

Resolved, That the American Council on Education expresses to Mr. John D. Rockefeller, Jr., its hearty appreciation of his pledge of \$20,000 a year for three years to support the work of the Committee on Personnel Methods in developing model record forms, achievement tests, rating scales, and vocational monographs.

Resolved, That the American Council on Education approves the recommendation of the Executive Committee that the annual check-up and mail service connected with the Personnel Register be discontinued as rapidly as practicable.

Resolved, That Teachers Colleges and Junior Colleges accredited by regional accrediting agencies are eligible to institutional membership in the American Council on Education.

Resolved, That the American Council on Education approves in principle the reorganization of relations between the Institute of International Education and the Council, as recommended by the Committee on the American University Union and that the Executive Committee is hereby authorized to put the plan into operation as soon as practicable.

Resolved, That the Director's budget submitted by the Executive Committee is hereby approved and that the Director is authorized to make expenditures of the funds of the Council in accordance therewith.

Resolved, That the American Council on Education expresses to the National Research Council its hearty appreciation for the hospitality accorded to it in allowing us to meet in this building.

Chairman's Address

Foreign Light on American Education

THE TITLE which I have recklessly chosen may perhaps call down upon the Council the fierce wrath of some of the so-called patriotic organizations, infuriated by the idea that any light can be thrown on anything in God's own country by the darkness of foreign ignorance. For my own personal peril at their hands I do not care, since I understand that I am already on the blacklist of several of these organizations because I have engaged in international educational work; the word *international* being synonymous in their minds with Bolshevism, anarchy, communism, and all else that is treasonable and hideous. But to protect the good name of the Council let me hasten to explain that I am myself unadulteratedly American, that I think there is much good in American education, much that might profitably be imitated in foreign systems; but that, good though it is, it is capable of improvement, and that a comparison with foreign ideals and methods throws new light on its peculiarities, shows us what we should cherish and increase and what we should try to guard against or eliminate.

All American education derives originally, of course, from European, but it has had for long periods a largely separate growth. Its future historians will note very important changes in the years from 1918 on, due to the closer contacts with European systems brought about by the war. The influx of French students begun on a large scale by the Association of American Colleges in 1918, and the visit of the British Educational Mission in the autumn of that year, marked the beginnings of a tremendous increase in contacts, a multiplying of the number of foreign students coming here and of American students studying abroad, of visiting pro-

fessors, and of organizations designed to produce international educational exchange. All this has led multitudes of us to compare much more consciously and definitely than ever before the foreign and the American educational systems. Was it not Matthew Arnold who said, "The man who knows only his Bible cannot really know his Bible?" So many of us, a few years ago, knowing only the American system, could not really know even that. But now we have had light from comparison and know better our own virtues and our own shortcomings.

In the space of a quarter of an hour or so I am of course not going to attempt the vast task of a detailed comparison of the European and American systems of education. I will only try to touch the high lights, a few of the most conspicuous general points of difference that have struck us during the last ten years and influenced greatly our efforts to improve our own methods and organization.

The great and outstanding difference, immeasurably far reaching in its results, is that European education produces, in the scholarly field at least, far more leaders of absolutely first rank than does American. This opinion, which began to dawn on my surprised mind some years ago, has recently been confirmed by various bits of evidence, by none more strikingly than by the statistics published by Dr. Slosson regarding the awards of the Nobel Prizes in physics, chemistry and physiology or medicine. Since their establishment in 1900 seventy-two of these prizes in science have been awarded. Grouping the winners by nationality, what country do we find in the lead? Germany, with twenty-one. The British Isles come second, with eleven; France third, with ten; the Netherlands fourth, with six. Next, tying with Sweden, comes our own country, with four winners. And very close on our heels follow Denmark and Switzerland, with three each. Comparing the populations of the various countries, we find that the Dutch, the Danes and the Swiss have won a Nobel Prize for every million of their people; whereas the United States has won one only for every twenty-eight million.

These prizes represent, of course, superlatively outstanding achievement in creative scholarship in the realm of science. It is perhaps not surprising that our country has never won the Nobel Prize in literature. Were there a competition in classical scholarship we might not think it surprising if the prizes went to the older nations. But in science! Think of the millions on millions we have spent on laboratories. Gaze on this glorious building in which we meet, dedicated to the promotion of research. Probably a far, far larger proportion of our population has studied science and worked in laboratories than in any other country. But the proportion of leaders in achievement is pitifully small.

Perhaps you will think I emphasize unduly these statistics of the Nobel Prize awards. But I consider them merely typical of a hundred other straws showing which way, in scholarship, the wind is blowing.

Why do we show up so badly in the comparison? The human material with which we work is as good as that of the European nations; indeed it is much the same. Visiting professors from Europe tell me that in native intellectual ability our American students are equal to theirs. The fault lies obviously in our educational system, which does not get the best possible out of our best.

A dozen reasons for this have no doubt leapt to your minds. Of course it is due partly to the fact that we have been forced to spread our education out very thin over vast numbers, with a sadly insufficient supply of properly educated teachers. But it is due even more to a fundamental difference in the way we regard higher education. In this country we think primarily of the individual student. We want to give him anything he wants. The university is a pleasant place, supposed to be advantageous to the young. Every boy or girl, therefore, should be allowed to go there if he or she wants to. This is the popular American view, which reckons not of the dire effect on the university. But in Europe they think primarily of learning, the precious heritage of the race, something to be enshrined and guarded. Only

those peculiarly fitted for her service are to be admitted as priests to the shrine, as carefully chosen torch bearers to pass on the sacred flame to later generations. Not the satisfaction of the individual, as Dr. Pritchett has recently said, but cherishing and increasing the human heritage of learning is the purpose of European higher education.

This fundamental difference in conception affects our whole process of higher education. Instead of selecting and training the best, encouraging them by most rigid tests to stretch their powers to the uttermost, we have inclined to adjust our education to the mediocre and to concentrate our attention on making education *interesting* to the *average* students. To quote Dr. Pritchett again, "the attention that the European has lavished upon his most gifted pupils we have largely focused at the other end in endeavoring to bestow the blessings of the average on the feeble-minded."

Our lamentable failure to do the best for our best students has been caused also by a sad misconception of democracy, by our mistakenly applying political principles to educational methods. We have assumed that because all men are born politically free and equal they must have identical educational opportunities, however unequal they may be intellectually. Even today some members of university faculties object that it is "undemocratic" to give to honor students special attention, training, and privileges. At such moments one almost despairs of our country! We might as well apply democracy to physics and determine the truth or falsity of the Einstein theory by popular vote at a Chicago municipal election. (Laughter and applause.)

Another reason why we have failed to screw up our best students to their highest possible achievement is because we are such a kindly people. Whatever our faults, we Americans are tender hearted, friendly, rather sentimental, and deeply attached to our children in a way that no other nation can understand. We want them to enjoy themselves, to be always comfortable, always amused, never troubled. That is our ideal for them. And, alone of all peoples on earth, we are also very often afraid of our children.

Therefore American pupils rarely learn what really hard work is. I am not blaming American parents. The same sentiments stir my own breast when I gaze upon a little French girl, aged about thirteen, who is pale and wan and apparently never gets out to play in the sunshine, but works and works and works at her lessons from dawn to dark. But the French system produces hard work and thoroughness, and ours does not. No doubt our constant catering to the pleasure, the comfort, the ease, the temporary likes and dislikes of our children is a more agreeable process for us than seeing them trained in hard work and thoroughness. But is it really, in the long run, as kind to the children?

Our tenderheartedness and sentimentality appear also in our unwillingness to eliminate the weak ones by ruthless tests. I well remember the blank amazement of a visiting professor from England when told that the students who had failed in his course were, under the local customs, entitled to a re-examination, a second chance.

As we look upon the products of the two systems of education, perhaps the most outstanding difference of all is in thoroughness. Superficiality is, of course, the most blatant fault of our American education. We like to slither about smoothly on the surface of things, to encourage our students to express glibly half-baked opinions founded on a very scanty supply of facts. Well, thoroughness is a dull thing to teach, and only the most gifted teachers can stir their students to a love of it. And accuracy is like it. To do a thing over and over until it is 100 per cent accurate is a tedious business for both pupil and teacher. It is pleasanter all round to pass him on when he has done it 60 per cent accurate.

There is another difference, the great and fundamental influence of which I myself did not realize thoroughly until I had contemplated the European systems for some years. That is the place and nature of the examinations for the degree. Abroad the examinations are generally far more difficult, more thorough and more searching than ours. And the Europeans are far more confident of their own exam-

ining ability. Perhaps they have indeed developed the art more highly than have we. They do not seem to care whether students attend classes or lectures or perform the details of academic duties, so long as they pass satisfactorily the great test of knowledge and power at the end.

Inexorable and impersonal as Fate itself seems the foreign examination. I once had the privilege of following closely the conduct of honors examinations in English in a great British university and the reading and rating of the papers. It was with something akin to awe that I contemplated the ruthless impersonality of the system and compared it with many of our American examinations, where the professor tests with such paternal interest and sympathy the ability of his own students, and especially of the best ones, his ewe lambs whom he has himself nurtured. However, we have achieved something like this English system in our College Entrance Examination Board tests and are in a few instances beginning to achieve it in some types of university examinations.

It is not merely the nature of examinations that differs on the two sides of the Atlantic. It is also their place. Abroad the examination, coming at the end of the student's course, tests him on all the substance of all his university work, and on his power to command it; and on this one great test he stands or falls. Whereas until recently practically all American examining was scattered in many fragments throughout the student's university career, and, having once been examined in a thing, he was privileged to forget it promptly. Knowledge is regarded here, someone has said, merely as a temporary asset to be bartered for so much credit.

And this brings me to a subject which I approach with some sinking of the heart, a far-reaching peculiarity of American education closely akin to our system of examining. Only of recent years have I realized all its awful implications and also the strangle-hold which it has upon us. I allude to our system of courses, points and credits. This has gone far to make our education merely a kind of cumu-

lative bookkeeping. Instead of passing through the discipline and development of a reasoned and unified curriculum, tested soundly at the end, an American student may obtain a degree by drifting from institution to institution, winter sessions and summer sessions, picking up points of credit here and there, unrelated and ill assorted, until the magic number of 120—or whatever it may be—is reached. "Save your coupons and get a diploma," is said to be the slogan of this system. That thoughtful and interesting article in the May *Atlantic*, "The Revolt of a Middle-Aged Father," remarks vividly: "A mechanical agglomeration of trigonometry, history of the Renaissance, Greek philosophy, scenario writing, interpretation of French drama, psychological measurements, palaentology, accounting, third-year German, and Provencal French, or any similarly relevant combination, arrived at with due consideration of the looks of the professors, their reputation as to 'cinch' courses, desire for a free Saturday, conflicts with various athletic events, and hatred of early rising—this, we submit, is not a system of education." (Applause.)

Yet how can we ever free ourselves from this octopus of points and credits? How dear they are to the heart of the administrator! How easy they make academic bookkeeping. How effectively they enable students to transfer from one institution to another and to fit summer sessions into their academic courses. How difficult for us to administer, for all students, any better test of fitness to receive a bachelor's degree than the acquiring of 120 points of credit.

Well, for purposes of emphasis I have arraigned too sweepingly and drastically some of the weaknesses and perils of American education. In many of our institutions, probably, they do not exist to anything like so dangerous an extent. But more or less they are inherent in our work, and as we have compared ourselves, these last few years, with European systems, they have leapt to our view. You are all aware how this perception has influenced our educational methods. Special honors courses, final comprehensive

examinations, external examiners, selective admission, sectioning by ability, tutorial systems, new fellowships for advanced study and research—in all these and other ways we are trying to remedy these faults. The effort marks a new and important era in the history of American higher education.

Our difficulties are enormous, but our task is far from hopeless. The students themselves are a bright spot in the picture. Idle, irresponsible and pleasure-loving though they may generally appear, many of them are excellent human material. Whenever we can strike the note that really touches their imagination they will respond gallantly; they will subject themselves voluntarily to the sternest discipline, toil through the most exacting labor, passionately seeking perfection in the service of scholarship and truth. I have seen them do this. But we must somehow strike the note that rings true and awakens their spirit.

VIRGINIA C. GILDERSLEEVE,
Barnard College.

Report of the Executive Committee

THE FOUR regular meetings of the Executive Committee were held on September 25, 1926, in Washington, on January 8 and March 12, 1927, in New York, and on May 5, 1927, in Washington.

During the year, new members have joined the Council as follows:

Constituent.—American Management Association; American Library Association; American Association of Junior Colleges.

Institutional.—Wesleyan College, Macon, Ga.; Lewis Institute, Chicago, Ill.; Lehigh University, Bethlehem, Pa.; University of Washington, Seattle, Wash.; College of the Sacred Heart, New York City; Mississippi Agricultural & Mechanical College, A. and M., Miss.; Mississippi Woman's College, Hattiesburg, Miss.; Baylor College for Women, Belton, Tex.; University of Wichita, Wichita, Kans.; Ouachita College, Arkadelphia, Ark.

Associate.—National Council on Religion in Higher Education.

The total membership of the Council is now 21 constituent, 15 associate, and 210 institutional.

Substantial progress has been made on the Modern Foreign Language Study, on the simplification of organization for international relations, and on the study of Personnel Methods in Education. We are gratified to report that Mr. John D. Rockefeller, Jr., has just pledged \$20,000 a year for the next three years to support cooperative experiments by the Committee on Personnel Methods. A resolution thanking Mr. Rockefeller is submitted for your consideration. Reports on these projects will be presented later on in the meeting by the respective committees in charge.

This year 173 colleges have taken part in the cooperative experiment with psychological tests for college freshmen. This enterprise has now become self-supporting. The question of offering the test to high schools for use with their

graduating classes has been referred to the committee in charge.

Careful attention has been given this year to the operations of the personnel register. By rigid economies its cost has been reduced from \$9,000 to \$7,600. The number of calls has diminished from 345 in 1924-25 to 251 in 1926-27. Only 91 of our institutional members have made use of the mail service, and 14 have personally consulted the files. Your Executive Committee is satisfied, after four years trial of this experiment, that such a Personnel Register cannot be effectively operated for less than \$20,000 a year. Serious efforts have been made, but without success, to secure a special subsidy for the Register. This impersonal method of handling a very personal matter does not seem to appeal to those who might grant support. Obviously, the Council cannot put two-thirds of its income into this project, and the expenditure of \$7,500 on necessarily inefficient service is most wasteful. Therefore the committee recommends that the Personnel Register service be discontinued.

This recommendation does not contemplate destruction of the files. These will remain available for consultation by college executives or for statistical studies. It means merely discontinuance of the annual check-up and of the mail service by which copies of registration blanks are sent in response to inquiries by letter.

The most important matter referred to this committee at the last meeting was the question of administering the conditions of eligibility for the new type of institutional membership authorized by the amendment to the constitution. Since three of the constituent members were not represented at the meeting when the amendment to the constitution was adopted, the representatives of these three were asked to vote on the adoption of the amendment by letter ballot. The three were the Association of American Universities, the American Association of Teachers Colleges, and the Council of Church Boards of Education. The vote was unanimous in favor of adoption.

It was the sense of the committee that a special examination of each individual case is necessary to determine when an organization is "of high standing" and does "carry on higher educational activities or cooperate with educational institutions in improving instruction," as provided in the constitution. Hence the following resolution was adopted to define the procedure in accepting institutional members of the new type:

Resolved, That until further experience warrants a change, institutional members of the new type may become members only on invitation of the Executive Committee.

In formulating a criterion for selection of new-type members, the committee has in mind the basic purpose of cooperation between industry and education: namely, the reduction of the human and material wastes that occur between leaving college and finding suitable life occupations. Industrial organizations that appreciate the national significance of this problem so keenly that they are glad to join forces with educational institutions in working toward better conditions are the ones with which close cooperative relations are mutually beneficial. Industries must expect to give as well as to get if the common enterprise is to be truly successful.

In accordance with this conception, invitations to become institutional members have been extended to the Bausch & Lomb Optical Company, the Eastman Kodak Company, the Gleason Gear Works, all of Rochester; to the Dennison Manufacturing Company of Framingham, Massachusetts; the Henry L. Doherty Company of New York; and to the Associated Industries of Massachusetts. Negotiations concerning membership are still in progress with these organizations. In addition, preliminary conferences on this matter have been held with nine other large firms. The committee is proceeding cautiously in the matter in order to be sure that only the true spirit and intent of the Council's action as defined above may be realized in practice.

As the study of the new type of membership progresses, it

is becoming clear that in some cases the purposes of industrial cooperation can be accomplished without establishing membership relations with industrial firms. Several local Chambers of Commerce have expressed a desire to develop cooperation on the Council's plan between local industries and schools in their respective home towns. These local chambers are all members of the United States Chamber of Commerce in Washington. Thus there already exist between Washington and 1,500 communities lines of communication that may appropriately be used to develop cooperation between industry and education because many Chambers of Commerce already take an active interest in local educational problems.

The question of cooperation between the U. S. Chamber of Commerce and the Council on this problem was discussed by the Committee on Education of the Chamber at a meeting last January. That committee agreed to make a trial of developing local cooperation between industry and education in one community. As effective technique of doing this is evolved, other communities will be given opportunities to undertake a similar project. The Council will act as technical consultant of the Chamber concerning this experiment.

For the U. S. Chamber of Commerce this enterprise has two major objectives, both of great interest to the Council. One is to discover what sort of help a community needs in carrying on the experiment, and the other, to evolve sound methods by which a central organization can serve as an agency of cooperation among local organizations without weakening local responsibility or inhibiting local initiative. There are a number of industrial organizations with which similar cooperative relations may prove fruitful, making it possible to carry out the Council's plan on a large scale without unduly increasing the number of institutional members of the new type.

The American Association of Junior Colleges, which has just become a constituent member of the Council, is planning a thorough study of the Junior College situation and has

asked the Council to act as sponsor for the investigation. The Executive Committee has agreed to do so, provided adequate financial support is secured by that association.

For several years past the North Central and the Southern Associations of Colleges and Secondary Schools have included in their lists of accredited colleges both teachers' colleges and junior colleges. The national associations of both these groups are constituent members of this Council. It is the sense of your Executive Committee that institutions on these two lists should be invited to become institutional members of the Council. Technically the Executive Committee is authorized by the constitution to decide this question, but in order to insure a hearty welcome to these institutions, the following resolution is submitted with the recommendation that it be approved:

Resolved, That Teachers' Colleges and Junior Colleges accredited by the regional accrediting agencies are eligible to institutional membership in the American Council on Education.

A special committee has been appointed to consider what can be done to unify federal, state and association questionnaires and to limit the number of miscellaneous questionnaires constantly being circulated by all sorts of agencies.

The Handbook of American Universities and Colleges is in the hands of the printer. Institutions have cooperated wonderfully. All but three out of 403 on the accredited list have sent in the information requested. This cordial cooperation has made possible the production of an accurate and impressive picture of present conditions in American Higher Education. When the volume of more than 1,000 pages is issued in the late summer each member of the Council will receive a complimentary copy and additional copies can be bought from the publishers, Chas. Scribner and Sons, for the modest price of \$2.50. This free distribution and low price are secured because of a grant of \$7500 from the Laura Spelman Rockefeller Memorial to pay the costs of typesetting, electrotyping, and complimentary copies.

Your committee has given considerable attention to the

problem of simplifying and making more efficient the American machinery for handling international relations. The arrangements made in 1924 between the Institute of International Education, the American University Union, and the Council have worked fairly well, but there have been some confusion and some duplication of effort. As a first step toward better coordination, at the request of the Council, the Committee on Foreign Travel and Study has transferred the administration of its scholarships for a junior year abroad from the Council to the Institute. This consolidates administration of scholarships in the Institute.

As a second step toward unification, the Council's Committee on the American University Union has submitted the following recommendations:

1. That the Administrative Board of the Institute be incorporated as an independent board of trustees.
2. That steps be taken to hasten the process by which the Board of the Institute be made thoroughly "representative," by having at least two-thirds of its Trustees elected from nominations by the Council, in accordance with the existing plan.
3. That steps be taken to secure an adequate endowment for the Institute, including the amount needed to conduct the work of the Union under its direction.
4. That the Council transfer the duties and responsibilities of its Committee on the American University Union to the Institute and that it discontinue that committee as well as other activities in the field of international education.

The Executive Committee has considered this question at two successive meetings and recommends to the Council action in accordance with the following resolution:

Resolved, That the American Council on Education approve in principle the reorganization of relations between the Institute of International Education and the Council as recommended by the Committee on the American University Union, and that the Executive Committee is hereby instructed to put the plan into operation as soon as practicable.

It is the sense of the Executive Committee that the plan marks a distinct step forward in developing more effective international educational relations. It is becoming clearer

that every nation must ultimately maintain an adequately equipped national office for administering and studying international relations. The United States can do its part by hastening the establishment of its own international headquarters. The Council keeps a guiding hand on the Institute's policies by nominating members of the Board of Trustees, and it is relieved of a large administrative job it is not equipped to handle. The Council is thus free to devote its major energies to cooperative studies of any and every phase of higher education at home and to secure close cooperation of the Institute in studies of foreign education should need for such arise.

During the past year the Council was represented by the Assistant Director, Mr. Robertson, at the Quinquennial Conference of British Universities held in Cambridge, England, in July, 1926; by the Director and Mr. A. L. Williston at a conference in Copenhagen in August, 1926, called by the World Association for Adult Education to plan an international congress on that subject in 1928; and by Chancellor S. P. Capen at the Pan Pacific Conference on Education called by the President of the United States in Honolulu in April, 1927.

Attention is called to the Treasurer's Report, which shows that the finances of the Council are in sound condition. The estimated income from fees of members, excluding special grants, for the year was \$33,180. Actual receipts were \$34,410. Total expenditures, \$60,114.34. Total receipts from all sources were \$62,568.89. Bank balance, May 2, 1927, \$2,454.55.

The Director's budget of estimated receipts and authorized expenditures for the coming year, 1927-28, is herewith submitted with the recommendation that it be approved.

The Executive Committee records with profound regret the death of one of the pioneers who established this Council and directed its growth during the difficult period of reconstruction after the war, Harry Pratt Judson. The Council owes much to his wise leadership, clear judgment, and faith-

ful devotion to its work. The following resolutions are submitted, that the Council may place on record its appreciation of him and of his great service.

Resolved, That the American Council on Education deeply mourns the loss of a wise leader and beloved friend, Harry Pratt Judson, president emeritus of the University of Chicago, chairman of the American Council on Education from 1919 to 1921, during a difficult period of adjustment after the war, and for several years chairman of the Committee on American University Union; and

Resolved, That the American Council on Education herewith expresses its recognition of his notable service to this Council, to education, and to the nation, and extends heartfelt sympathy to his family and to the University of Chicago.

Respectfully submitted,

R. M. HUGHES,
Secretary.

Director's Budget, 1927-28

ESTIMATED RESOURCES

I. GENERAL FUNDS:

Membership dues 1927-28, \$34,000, of which \$6,230 have been paid. Balance due.....	\$27,770.00	
Balance on back dues.....	3,810.00	
Services for Investigations.....	1,800.00	
Bank balance April 30, 1927.....	2,454.55	
		<u>\$35,834.55</u>

II. INTERNATIONAL FUNDS:

Laura Spelman Rockefeller grant.....	\$35,000.00	
Bank balance, April 30, 1927.....	6,519.57	
		<u>41,519.57</u>

III. FUNDS FOR SPECIAL PROJECTS:

Modern Foreign Language Study.....	\$73,894.04	
Study of Personnel Methods.....	20,000.00	
Handbook of American Universities and Colleges.....	6,980.64	
		<u>100,874.68</u>

Total Estimated Resources, 1927-28..... \$178,228.80

ESTIMATED EXPENDITURES

	<i>General</i>	<i>Interna- tional</i>	<i>Special Projects</i>	
Rent.....	\$4,000	\$1,000		
Salary of Director and Assistant Director....	12,000	7,200		
Salary of Assistants....	10,000	3,000		
Administrative traveling expenses.....	3,000	1,500		
Stationery, printing and supplies.....	1,000	500		
Telephone and telegrams.	300	200		
Postage.....	300	200		
Furniture and appliances.	200	...		
EDUCATIONAL RECORD...	3,000	...		
General Expense.....	500	100		
American University Union.....	...	26,500		
Teachers' Annuity Association.....	600	360		
Special Projects.....			\$100,874.68	
Total.....	<u>\$34,900</u>	<u>\$40,560</u>	<u>\$100,874.68</u>	<u>176,334.68</u>
Estimated surplus.....				<u>\$1,894.12</u>

Treasurer's Report

WASHINGTON, D. C.

May 5, 1927.

DR. C. R. MANN, Director,
American Council on Education,
26 Jackson Place,
Washington, D. C.

DEAR DR. MANN:

I herewith submit four statements of F. W. Lafrentz & Company, being audits for the period from May 1, 1926, to April 30, 1927, on the following accounts of the American Council on Education:

American Council on Education—general funds.

International Education Fund.

Modern Foreign Language Study Fund—New York Committee.

Modern Foreign Language Study Fund—Canadian Committee.

I desire to submit these papers as my Annual Report as your Treasurer for the past year.

Very truly yours,

CORCORAN THOM,
Treasurer, American Council on Education.

STATEMENT OF RECEIPTS AND DISBURSEMENTS

From May 1, 1926, to April 30, 1927

RECEIPTS

Constituent Members.....	\$ 1,800.00	
Associate Members.....	160.00	
Institutional Members.....	30,650.00	
	<hr/>	\$32,610.00
Subscriptions to Educational Record and extra extra copies.....		209.90
Contributions:		
John D. Rockefeller, Jr., for Personnel Methods.....	\$ 3,500.00	
John D. Rockefeller, Jr., for Industrial Cooperation.....	5,000.00	
	<hr/>	8,500.00
Sale of Psychological Tests:		
1925.....	\$ 1,406.27	
1926.....	4,561.85	
	<hr/>	5,968.12
Reimbursement for Administating Grants:		
Foreign Language Study Fund—Canadian Committee.....	\$600.00	
Foreign Language Study Fund—New York Committee.....	1,200.00	
	<hr/>	1,800.00
Interest on Bank Deposits.....		216.03
Services Division of Personnel.....		90.00
Sale of Report on Personnel Procedure.....		61.30
	<hr/>	
Total Receipts.....		\$49,455.35
Cash on Hand May 1, 1926:		
American Security and Trust Company.....		11,548.54
	<hr/>	\$61,003.89

TREASURER'S REPORT

221

DISBURSEMENTS

Salaries:

Director..... \$12,000.00

Assistants..... 5,639.28

\$17,639.28

Rent..... 1,792.00

Stationery, Printing and Supplies..... 1,659.28

Postage..... 442.73

Telephone and Telegrams..... 379.03

General Expenses..... 952.70

Traveling Expenses of Director..... 2,484.87

Traveling Expenses of Executive Committee..... 792.67

Committee on Personnel Methods..... 4,278.77

Publication expenses of EDUCATIONAL RECORD..... 3,788.68

Psychological Test Experiment:

Psychological Tests:

1925..... \$ 585.64

1926..... 1,801.39

\$2,387.03

Thurstone—General Expenses..... 3,627.86

6,014.89

Furniture and Fixtures..... 36.00

Division of College and University Personnel:

Furniture and Fixtures..... \$35.00

General Expenses..... 54.88

Postage..... 120.00

Rent..... 1,368.00

Salaries..... 5,215.00

Stationery, Printing and Supplies..... 458.49

Telephone and Telegrams..... 120.00

7,371.37

Industrial Cooperation:

C. E. Hewitt—Traveling Expenses..... \$1,902.32

C. E. Hewitt—Salary..... 7,200.00

Stenographer..... 807.50

Stationery, Supplies, etc..... 734.25

Rent..... 273.00

10,917.07

Total Disbursements..... \$58,549.34

Cash on Hand, April 30, 1927:

American Security and Trust Company..... 2,454.55

\$61,003.89

INTERNATIONAL EDUCATION FUND
STATEMENT OF RECEIPTS AND DISBURSEMENTS

From May 1, 1926, to April 30, 1927

RECEIPTS

Laura Spelman Rockefeller Memorial Fund.....	\$35,690.00	
Commonwealth Fund—Fellowship Fund.....	500.00	
Committee on Foreign Travel and Study—Administration Purposes.....		3,250.00
Undergraduate Scholarships:		
Felix M. Warburg.....	\$3,000.00	
S. W. Straus.....	1,000.00	
Aaron Naumburg.....	2,000.00	
Mrs. A. Carnegie.....	1,000.00	
		<u>7,000.00</u>
Contributions:		
Chas. L. Pack, Rome A. U. U.....	\$1,000.00	
Chas. L. Pack, Dr. Krans' expenses, visit to U. S.....	2,000.00	
		<u>3,000.00</u>
Refunds:		
American Council on Education, refund of draft for scholarship to C. S. Dickey, which was lost.....	\$500.00	
D. A. Robertson, refund on traveling ex- penses abroad, 1926.....	354.96	
		<u>854.96</u>
Interest on Bank Deposits.....		328.60
Contribution for Handbook of American Universities and Colleges.....		<u>1,000.00</u>
Total Receipts.....	\$51,623.56	
Cash on Hand, May 1, 1926:		
American Security and Trust Company.....	6,011.91	
		<u>\$57,635.47</u>

TREASURER'S REPORT

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DISBURSEMENTS

Washington Office:

Salaries:

Director..... \$7,200.00

Assistants..... 3,843.73

\$11,043.73

Traveling Expenses..... 2,013.75

Stationery, Printing and Supplies..... 219.47

Telephone and Telegraph..... 4.22

Postage..... 125.00

Furniture and Appliances..... 35.00

Teachers' Annuity Association.. \$720.00

Employe's proportion to Teach-

ers Annuity Association..... 360.00

360.00

Rent..... 1,000.00

General Expenses..... 247.03

Undergraduate Scholarships..... 7,200.00

\$22,248.20

New York Office:

Office Expense..... 1,623.46

London Office:

Salaries..... \$6,500.04

Teachers Annuity Association.. \$350.00

Employe's proportion to Assn... 174.96

175.04

Office and Traveling Expenses..... 5,050.00

Newspapers and Magazines..... 33.00

Exchange..... 24.50

11,782.58

Paris Office:

Salaries..... \$7,000.08

Teachers Annuity Association.. \$400.00

Employe's proportion to Teach-

ers Annuity Association..... 199.92

200.08

Office and Traveling Expenses..... 7,250.00

Exchange..... 11.50

14,461.66

Handbook:

Printing and Typewriting..... 376.39

Stationery and Supplies, etc..... 102.97

Postage..... 40.00

519.63

Total Disbursements..... \$50,635.26

Cash on Hand, April 30, 1927:

American Security and Trust Company..... 7,000.21

\$57,635.47

MODERN FOREIGN LANGUAGE STUDY FUND
NEW YORK COMMITTEE

STATEMENT OF RECEIPTS AND DISBURSEMENTS

From May 1, 1926, to April 30, 1927

RECEIPTS

Carnegie Corporation.....	\$60,000.00
Interest on Bank Deposits.....	376.37
Refunds:	
On Insurance.....	\$28.90
On Printing and Publishing.....	548.95
On Traveling Expenses.....	26.23
On Sale of Furniture.....	162.65
On sale of American Council Tests.....	817.49
	<hr/>
	1,584.22
Transferred from Canadian Committee.....	3,886.70
	<hr/>
Total Receipts.....	\$65,847.29
Cash on Hand, May 1, 1926:	
American Security and Trust Company.....	9,385.89
	<hr/>
	\$75,233.18

DISBURSEMENTS

Salaries and Wages.....	\$21,087.18
Supplies and Equipment.....	840.08
Printing and Publicity.....	4,518.95
Communications.....	1,216.44
Travel and Meetings.....	5,692.73
Expert Assistance.....	21,347.88
Contingent.....	1,997.66
Transferred to Canadian Committee:	
Expert Assistance.....	668.94
	<hr/>
Total Disbursements.....	\$57,369.86
Cash on Hand, April 30, 1927:	
American Security and Trust Company.....	17,863.32
	<hr/>
	\$75,233.18

MODERN FOREIGN LANGUAGE STUDY FUND—CANADIAN
COMMITTEE

STATEMENT OF RECEIPTS AND DISBURSEMENTS

From May 1, 1926, to April 30, 1927

RECEIPTS

Carnegie Corporation.....	\$27,500.00
Interest on Bank Deposits.....	188.20
Refunds:	
Unused Balances of Advances for Committee Meetings.....	429.77
Transferred from the New York Committee.....	668.94
	<hr/>
Total Receipts.....	\$28,786.91
Cash on Hand, May 1, 1926:	
American Security and Trust Company.....	10,434.38
	<hr/>
	\$39,221.29

DISBURSEMENTS

Salaries and Wages.....	\$12,478.60
Supplies and Equipment.....	1,269.34
Printing and Publicity.....	1,098.05
Travel and Meetings.....	4,314.46
Communications.....	64.58
Expert Assistance.....	1,928.84
Contingent.....	650.00
Transferred to New York Committee:	
Expert Assistance.....	\$3,799.83
Supplies and Equipment.....	86.87
	<hr/>
	3,886.70
	<hr/>
Total Disbursements.....	\$25,690.57
Cash on Hand, April 30, 1927:	
American Security and Trust Company.....	13,530.72
	<hr/>
	\$39,221.29

Report of the Director

THIS is the tenth annual meeting of the American Council on Education. When the first meeting was held we were at war. The purpose then was to discover how the colleges could cooperate to serve the nation in that grim crisis. The way was found. Our educational institutions rendered conspicuous service, and, having felt the thrill that accompanies intelligently organized cooperation in a great common cause, they have maintained this Council through the intervening years with a firm faith that there are in these piping times of peace other great national services which can be rendered only by voluntary but appropriately organized cooperative effort. It is the chief problem of the Council to discover rules of the game that will both stimulate local initiative and make team-play effective.

During the ten years that have elapsed since we entered the world war, profound changes have taken place both in public attitude toward education and in school practices. It is safe to say that never before have such profound changes taken place so rapidly and so universally throughout a great people. The war experience seems to have dissolved ancient prejudices, traditions and habits, thereby liberating us for a new orientation and a recrystallization of thinking in new and very different patterns. What are the most significant features of the situation in which we now find ourselves?

One of the most significant and characteristic features of the present situation appears to be the ever-increasing number and variety of activities that are grouped under the general title of "personnel." This word is a bequest from the war. It came into universal use then because winning the war clearly required that the nation exert its full strength, and one essential condition for doing this is that every citizen be so trained and placed in the working team that he contributes his utmost to the common cause. The so-called

personnel problem was thus found to be one critical problem in releasing maximum national energy for achieving a worthwhile and significant mission.

Appreciation of the significance of the personnel problem was not limited to those responsible for guiding the nation through the crisis. The problem was a very vital one for every loyal individual citizen. Everyone of them had to settle for himself the very insistent question: What can I do best to help? By this intimate and dynamic process of individual training on the job, so many people became vitally aware of the problem that there is now well nigh universal recognition of its importance in discovering abilities and fostering normal continuous individual growth.

This widespread recognition of the significance of the personnel problem is leading to a public demand for a new type of service from the schools. For parents no longer meekly accept a school's judgment that Johnnie is hopeless because he has failed in traditional school courses. Parents know that their Johnnie has some latent capacities for usefulness. They demand that schools help Johnnie discover his specific abilities and provide opportunities for their development. Hence the ever-increasing experimentation with psychological tests, placement tests, new type examinations, rating scales, sectioning on the basis of ability, honors courses, and other devices for measuring individual differences and adapting school practices to them.

In his admirable report on Personnel Procedure in Education, issued by the Council last fall, President L. B. Hopkins lists twenty major activities that have direct bearing on this personnel problem in colleges. This list includes, besides typical personnel techniques, like psychological tests, many of the normal operations of running a college; such as selective process for admission, freshman week, health service, discipline, curriculum, methods of instruction, research concerning teaching, and coordination within the college and with outside agencies. The treatment of such activities is necessary in any study of the personnel problem in college because clearly each has an intimate and direct bearing on

making the institution help the individual discover and develop his own attitudes and specific abilities. These studies and experiments in personnel methods, stimulated by the public demand for individual development, are gradually expanding our conceptions of the responsibilities and opportunities of schools and colleges for national development and international progress.

School and colleges are not the only institutions that are being renewed by the personnel point of view. Industry, business, and the professions are feeling its impress. The public demand that Johnnie's abilities be discovered and developed in school is quite as insistent that he find opportunity for their further development in the world's work. The tragedy of buried talent has always been appreciated by a few; now it is very generally recognized. Professional schools are beginning to appreciate that excessive elimination of would-be doctors, lawyers, and engineers is caused by failure to detect special talent in time. Some industrial organizations have even come to see that sound personnel methods are as effective in improving products, in raising wages, and in expanding markets as are scientific methods of research, of eliminating waste and of mass production. Therefore the personnel problem now appears to be a fundamental and very vital common problem for the professions, for industry, and for education. How can they profitably cooperate in working toward its solution?

The most natural place at which to begin any cooperative enterprise is the place where the cooperating agencies normally come in contact with one another. In the case before us this occurs when a youngster leaves school and enters the world's work. If the school has the personnel point of view, it is interested in helping its graduates find further opportunities for continued growth. If the professions are interested in upholding professional standards, they are interested in finding men of appropriate attitude and bent. If industry recognizes that growing employees mean business prosperity, it is interested in finding employees who will grow in its service. Mutual understanding, a common

language, reciprocal confidence, comparable standards for appraising men, are needed if boys and girls are to pass from school to occupations with a minimum of human suffering and material waste.

It is not necessary here to dilate on the fact that present conditions of transition from school to established occupation are not ideal. Everyone remembers his own struggle to gain a toehold in life. Every industrial firm looks with despair at its continuous costs of breaking in and of turnover. Everyone can point to many cases of growth stunted by grinding at the wrong job to keep from starving. The statistics of elimination from college and professional school bear eloquent testimony to the same effect. This area of life's experience, in which most youngsters flounder about between school and work for several years in fear and darkness, has been appropriately named "no man's land." There's no excuse for no man's land in time of peace. To convert that area into productive gardens is one of the greatest present opportunities for constructive national service.

Before the war solution of the problem of no man's land seemed hopeless. School men were lined up on one side of the area, industrialists on the other. One group talked pedagogy and chased culture; the other talked business and chased dollars. Their respective patterns were incomprehensible to one another. Their common problem of building men had not yet emerged.

Now all this is changed. Schools understand that art is wisdom in action—that fine culture may result from crowding into the world's work all the excellence it will bear. The professions are recognized as fields for continuing growth, and industries are beginning to see that they are fundamentally educational institutions. They educate their employees for better or for worse by the way work is organized and done. They also educate the public for better or for worse by the way they deal with customers. All are growing in comprehension of the fact that better personnel procedure is one of the major lines of progress. And having thus found a vital common problem, industry, the profes-

sions and education can get together in a united attack. It is for the purpose of discovering how the world's work and education may profitably cooperate in solving the problem of no man's land that this Council is inviting organizations, not primarily educational, to become institutional members of the Council on the same footing with universities and colleges.

Certain phases of the technique of personnel investigation are already so well developed as to make possible a practical start on this joint enterprise. For example, all agree that a clear and concise objective record of what people actually do in the world's work is the necessary foundation for sound progress. By much experimentation we have learned how to write such a record in terms of job specifications and other observable actions and facts in such a way as to supply industry and the professions with the data they need for placement, for measurement of achievement, for wage scales and for promotion, and at the same time to furnish schools the information they need for revising curricula, for vocational guidance and for appraising capacities. Commonly acceptable forms for keeping significant personal records, for rating scales and for various forms of objective tests are also developing. A standard terminology is evolving, making possible mutual understanding because results of experiments by scattered observers are expressed in comparable terms.

Besides the personnel problem, which focuses in no man's land, there is a second feature of the present situation that is no less significant, characteristic, and important. It would obviously be dangerous if education, industry and the professions threw their entire energies into liberating personality and fostering its uncontrolled growth. To be a useful citizen an individual must not only have his abilities liberated and developed; he must be able to use them effectively in team-play with his fellow men. The genius of a lone star performer is seriously handicapped if he cannot play the game. Uncontrolled freedom for everybody may be worse than despotism.

This is neither the time nor the place to start a discussion on discipline in education. It is important, however, to record here the fact that since the war there has emerged a novel technique of forcing self-discipline through voluntary cooperation. The process is generally described by the phrase: "decentralized responsibility with centralized cooperation." This is the engineering counterpart for the obsolescent legal phrase, "states rights." It suggests how engineers achieve things lawyers like to talk about. It summarizes the transition that is taking place from fussing about rights to working to make this world a better place in which to live. It appeared shortly after the war when we had lived through a period of centralized control wholly appropriate to the crisis but fundamentally abhorrent to the American people.

The technique of operating with decentralized responsibility and centralized cooperation has been perfected by the Department of Commerce under the inspiring leadership of Herbert Hoover. He is using it to eliminate wastes in industry through simplified practice. The technique is simple. An expert committee gathers and organizes basic facts concerning the commodity under consideration; for example, brick. Manufacturers and consumers of brick are invited to a conference where these facts concerning number of styles made, number used, cost of marketing rare sizes, etc., are presented and discussed. Questions not answered by the first set of facts are raised. The conference adjourns to think it over while the experts gather the new facts needed. Another conference—more facts, until all concerned agree on standard sizes, where such standardization does not limit proper initiative, and thereafter all voluntarily maintain those standards because each is convinced by facts that it is to his own best interest as well as to that of the group to do so. Each is still solely responsible for operating his own plant his own way; but his freedom has been voluntarily curtailed because of the discipline he has received at the hands of his colleagues in the face of facts.

One of the most threatening dangers to American institutions is the tendency to centralize authority and control in

the Federal Government. Decentralized responsibility with centralized cooperation is an effective antidote. Many people still fear that an increase in the scope of the Bureau of Education or the establishment of a Federal Department of Education would ultimately mean federal control of education. The possibility of such control is growing less and less each year because the simplified practice activities of the Department of Commerce are proving so effective and popular that other departments are beginning to operate on the same principle. To be successful, a Department of Education would have to work in the same way, which, as just stated, makes centralization of control inherently impossible.

The process under discussion applies not only to far-flung organization of scattered units. It is perhaps even more significant in classroom practice. For when a teacher has so decentralized responsibility for learning that each student assumes his own share for himself, real learning and discipline begin. Each student then proceeds on his own steam to master the mission he has set himself. His discipline comes from overcoming the difficulties inherent in accomplishing the task. The teacher is the agency of centralized cooperation. She helps the students help each other in doing their self-imposed jobs. The Dalton plan and honors courses succeed when they realize this principle in practice. Several recently organized mammoth industrial corporations are consciously trying to realize it also in practice.

Decentralized responsibility is much more familiar in industry than it is in the schools or the professions because of the extensive activities of the Department of Commerce. The process is coming to be known as the Hoover technique. It applies not only to combinations of companies in one corporation, but to the relations of a foreman with the men in the shop. This Council is operating in accordance with it in developing cooperative studies and experiments with the colleges.

The problems of personnel and of team-play are correlative halves of the central problem of national progress—the so-called manpower problem. In working toward fuller

and nobler development of manpower, a just balance must be kept between the conflicting requirements of these two correlative halves. Only thus shall we progressively achieve that controlled freedom, that ordered liberty, that disciplined initiative, that trained imagination, and those self-governing and growing men and women without whom no nation can endure. Neither the professions nor education nor industry nor government can solve the problem single-handed. We clearly need more talent in the professions, more reality in education, more science in industry and less government in business, if latent human energies are to be liberated and adjusted to sound social order. An appropriate agency of centralized cooperation is all that is needed to start concerted action. What are its essential features?

To be effective in the United States such a central agency must be more than a clearing house of ideas and information. If people are merely kept informed of new developments and each is left to adjust himself to the growing situation, national progress is haphazard and slow. Far more dynamic results are obtained when the central agency employs experts who make scientific classifications and analyses of facts, who raise searching questions concerning their meaning, and who arrange conferences of those concerned to face the facts, discuss them, and ultimately to reach agreements which all voluntarily adopt. Such a conference is really a seminar and the educational processes going on are the familiar processes of cooperative education, with the advantage that the leaders are experts who work scientifically and use the Hoover technique of decentralized responsibility with centralized cooperation.

The cost of maintaining a central agency of cooperation that functions in this way is insignificant in comparison with the value of the results secured when it works on a really vital practical problem. For example, the central office cost of operating the Council's experiment on psychological tests for college freshmen is about \$6,000 each year. Nearly 200 institutions are participating, so it costs about \$30 apiece for expert guidance and sharp tools to work with.

At least 200 men at the participating colleges are educating each other, and some 70,000 students are getting progressively more intelligent treatment in consequence.

The success of a central agency of cooperation depends in large measure on the type of topic selected for cooperative study and experiment. The situation today with regard to the manpower problem resembles the situation 150 years ago in physical science. They had then built up a fairly complete science of mechanics of things that could be seen, weighed and measured. Little had been accomplished toward mastering the invisible energies of Nature—heat and electricity. In these realms real progress began when temperature was recognized as a significant characteristic of heat and the thermometer was invented. This defined units of temperature, standardized terminology, and made observations by widely scattered observers comparable.

Similarly in electricity a long step toward release and control of electric energy was made when Faraday proved that the amount of copper deposited per minute by a galvanic current is a valid measure of current strength. By thus establishing correlation between one characteristic of electricity, which is invisible, and certain amounts of perfectly visible copper secured by a definite arrangement of material conditions, he followed a procedure that has proved sound in extending human control over invisible powers by study of objective facts and organization of material conditions.

The same procedure is now beginning to be used in liberating and guiding the energies of men. Everything one does in the physical world is characteristic of inner invisible workings of human nature that we are trying to understand. Each of us is constantly drawing inferences based on observation of the actions of others. But each of us is doing this in his own way. We have no general agreement as to which types of action are significant, no standard terminology and no well-recognized scales of measurement. Hence the whole modern testing and guidance program is directed toward discovering what objective actions are most significant of

latent powers and how to record such actions that they may be widely understood and interpreted in a way to help men find themselves and grow.

The work of this Council has always been aimed in the direction indicated. The standards committee has labored to secure common terminology and comparable objective standards for colleges. The finance inquiry did the same for accounting. The experiment with psychological tests and the achievement tests of the Modern Foreign Language Study tend to the same end. The cooperation with industry and the professions on the manpower problem will unquestionably be more fruitful to all concerned if it follows similar lines. As stated, a working model job specification form has been developed and is proving effective in securing the needed objective record of what men really do. The grant just received from Mr. John D. Rockefeller, Jr., is for the purpose of developing similar model forms of personnel record cards, achievement tests, rating scales, and vocational monographs, as a means of helping men discover what they are best qualified to do.

Experience has demonstrated the necessity for cooperation between education and the world's work in developing all these model forms. For example, many vocational monographs have been prepared by professional and business men and have been found by teachers to be useless in giving students the information they need to guide them in choosing an occupation. Similarly most school records are practically of little use to employers seeking employees. A teacher's guess as to what occupation Johnnie is best qualified to follow is apt to be futile if not actually misleading, because teachers have so little accurate knowledge of the real conditions in a variety of occupations. Schools do not teach youngsters the things they should be able to do if they are to get on well in later life, because schoolmen do not know accurately what those things are. It is the manifest duty of those who do know to give the missing information to those who need it in terms that both can understand. Model forms developed by conference and cooperative experiment

make possible common terminology and hence mutual exchange of essential facts which all need.

From the foregoing it is clear that the organizations that can help most and also profit most in this cooperative study and experiment are those that recognize in the progressive solving of the manpower problem a great opportunity for national progress. In achieving present industrial success scientific research, good organization and elimination of material waste have been important factors. The possibilities of further progress through release of manpower by creating conditions in which men may grow are great. Experiments to discover how are quite as necessary as are experiments to improve material products. Membership in the Council means participation and investment in a cooperative effort to abolish no man's land. Is there any other enterprise that offers greater chances than does this for creating more human wealth and more material prosperity?

The significance of this enterprise is plainly portrayed in the parable of the stone cutters. A stranger visited the site where a cathedral was being built. Happening upon a workman chipping stone he asked: "What are you doing, friend?" Without lifting his eyes or stopping work the laborer replied: "Earning eight dollars a day." The stranger wandered on and came to a second workman. "What are you doing, friend?" he asked. Looking up with a quizzical glance the worker replied: "Can't you see I'm cutting stone?" The stranger wandered on and came to a third workman cutting stone. "What are you doing, friend?" he asked. Looking up with a bright smile the man replied: "I'm building a Cathedral."

It took centuries to build a mediaeval cathedral, but a still more perfect temple can now be completed with the tools of modern science in much less than a single lifetime.

Carlyle discerned the genuine culture and spiritual wisdom that comes to cathedral builders. In 1834 in his *Review of the Corn Law Rhymes* he wrote:

Nay, it appears to us as if in this humble Chant of the Village Patriarch might be traced rudiments of a truly great idea; great though all undeveloped. The Rhapsody of "Enoch Wray" is, in its nature and unconscious tendency, Epic; a whole world lies shadowed in it. What we might call an inarticulate, half-audible Epic! The main figure is a blind, aged man; himself a ruin, and encircled with the ruin of a whole Era. Sad and great does that image of a universal Dissolution hover visible as a poetic background. Good old Enoch! He could do so much; was so wise, so valiant. No Ilion had he destroyed; yet somewhat he had built up: where the Mill stands noisy by its cataract, making corn into bread for men, it was Enoch that reared it, and made the rude rocks to send it water; where the mountain Torrent now boils in vain, and is mere passing music to the traveler, it was Enoch's cunning that spanned it with that strong Arch, grim, time-defying. Where Enoch's hand or mind has been, Disorder has become Order; Chaos has receded some little handbreadth, had to give up some new handbreadth of his ancient realm. . . .

Rudiments of an Epic, we say; and of the true Epic of our Time—were the genius but arrived that could sing it! Not "Arms and the Man"; "Tools and the Man," that were now our Epic. What indeed are tools, from the Hammer and Plummets of each Enoch Wray to this Pen we now write with, but Arms, wherewith to do battle against *unreason* without or within, and smite in pieces not miserable fellowmen, but the Arch-Enemy that makes us all miserable; henceforth the only legitimate battle!

C. R. MANN,
Director.

Constitution of American Council on Education

1. NAME: The name of the organization shall be "American Council on Education."

2. OBJECT: The general object of the Council is to promote and carry out cooperative action in matters of common interest to the associations represented. It is understood that such matters will lie mainly in the field of university and college work, and in related educational fields. The Council was organized to meet national needs in time of war and will always seek to render patriotic service. It will also encourage international cooperation in educational matters.

3. MEMBERSHIP: The membership of the Council shall consist of three classes of members—constituent, associate, and institutional.

Constituent Members: This group shall consist of national educational organizations and such other bodies having similar interests as may from time to time be added by the Council.

Each organization shall be represented on the Council by three members who shall vote as a unit through a designated person. It is recommended that each organization in the first election following the date of this meeting, elect one member for a term of one year; one for a term of two years; and one for a term of three years; and that all subsequent elections be for terms of three years. Elections of new members to the Council shall take effect immediately following such elections. Any election to fill a vacancy occurring during the year shall take effect at once, and shall be for the remaining period of the term thus filled.

The Council shall reports its actions to the several organizations at the close of each year ending April 30, and at such other times as may be desired.

Associate Members: Associate members shall consist of such organizations having interests related to the work of the Council as may from time to time be elected by the Council. Associate members may send one representative each to the meetings of the Council, without right to vote.

Institutional Members: This group shall consist of colleges, universities and professional and technical schools of similar grade, that contribute not less than one hundred dollars to the treasury of the Council, and of other organizations of high standing that carry on higher educational activities or cooperate with educational institutions in improving instruction, and that contribute not less than five hundred dollars a year to the treasury of the Council. The conditions of eligibility for institutional membership, both for educational institutions and for other

organizations, and the scale of membership fees shall be fixed by the Executive Committee of the Council. Institutional members may send one representative each to the meetings of the Council. Whenever a vote is taken, if there are negative votes, the institutional members shall be counted separately and no action shall be valid unless supported by a majority of the constituent members present and voting. On request of any three members any matter directly affecting institutional members shall be made the subject of a referendum vote by them before final action is taken by the Council.

4. DUES: The annual dues for constituent members shall be \$100 a year, for associate members \$10 a year, and for institutional members from \$100 to \$500 a year for educational institutions, and from \$500 to \$2,500 a year for other organizations, a portion of which shall be for one or more subscriptions to THE EDUCATIONAL RECORD at \$2.00 a year for each subscription, the number of copies to which each member is entitled being fixed by the Executive Committee.

5. OFFICERS: The Council shall elect a Chairman, a first Vice-Chairman, a second Vice-Chairman, a Secretary, a Treasurer, and such other officers as from time to time may seem desirable. The Treasurer need not be a member of the Council. All funds for which the Council, or any of its committees, is responsible, shall be received by the Treasurer and shall be disbursed by him under proper authority.

The Council shall also elect a salaried Director, who shall be the chief executive officer. He shall have general administrative supervision of the affairs of the Council and shall be responsible for the carrying out of such plans and policies as the Council, or its executive committee, may approve. He shall be *ex officio* a member of the executive committee and of all standing committees. He shall report annually to the Council, and shall make such other reports as the Chairman of the Council may request.

All officers, except the Director, shall be elected at the Annual Meeting, and their terms of office shall begin immediately following election.

6. EXECUTIVE COMMITTEE: There shall be an Executive Committee consisting of ten members, eight selected from the representatives of the constituent organizations, and the Director and the United States Commissioner of Education *ex officio*. The Chairman and Secretary of the Council shall be Chairman and Secretary, respectively, of the Executive Committee. The remaining six members shall be elected by the Council, two at each annual meeting to serve for a three-year term. The Executive Committee shall hold meetings at least quarterly, and shall report its actions to the members of the Council after each meeting.

In case a member of the Executive Committee shall fail to attend (or to designate an alternate) at two meetings of the Executive Committee, he shall cease to be a member thereof. In case of a vacancy on

the Executive Committee, the Committee shall have power to fill the vacancy until the next meeting of the Council.

7. MEETINGS: The annual meeting of the Council shall be held on the first Friday in May. Special meetings may be called by the Chairman. The Chairman shall call a meeting at any time at the request of representatives of any three constituent organizations.

Written notice of all meetings shall be sent to all members at least two weeks in advance, except in special circumstances when this provision may be waived by consent of the representatives of two-thirds of the organizations constituting the Council.

Those present at any meeting of which written notice has been duly given, shall constitute a quorum for the transaction of business, but no action shall become effective until approved by representatives of a majority of the organizations constituting the Council.

8. BUDGET: The Executive Committee shall present a budget each year at the annual meeting, and no financial obligation shall be incurred by any officer or committee except as authorized by the Council or the Executive Committee. The fiscal year of the Council shall close on April 30.

9. TRAVELING EXPENSES: The traveling expenses of the officers and the Executive Committee may be paid from the funds of the Council.

It is recommended that the traveling expenses of the other members attending the meetings of the Council be paid by the organizations which they represent.

10. COMMITTEE APPOINTMENTS: The Council and the Executive Committee may appoint special committees. All committee appointments shall expire April 30, with right to reappointment. The members of committees may be selected from the members of any institution associated with one of the organizations constituting the Council. Chairmen of committees shall be invited to sit with the Council, without right to vote.

11. AUTHORITY OF COMMITTEES: Final responsibility for all undertakings rests with the Council. The Executive Committee shall act for the Council between meetings, but shall refer all questions involving new policy to the members of the Council for letter ballot before taking final action. Committees are not authorized to commit the Council to any undertaking not specifically authorized by the Council or its Executive Committee.

12. AMENDMENTS: This Constitution may be amended at any time by vote of three-fourths of the organizations constituting the Council.

Written notice of any proposed change in the Constitution shall be sent to all constituent members of the Council at least two weeks before the meeting at which the proposed change is to be considered.

Officers of the American Council on Education, 1927-28

Chairman: President Walter Dill Scott, Northwestern University, representing the Association of American Colleges.

First Vice-Chairman: Professor Shelton Phelps, George Peabody College for Teachers, representing the American Association of Teachers Colleges.

Second Vice-Chairman: President R. A. Pearson, University of Maryland, representing the Association of Land Grant Colleges.

Secretary: Mr. S. D. Shankland, National Education Association, representing the Department of Superintendence of the National Education Association.

Treasurer: Mr. Corcoran Thom, American Security and Trust Company, Washington, D. C.

Director: Dr. C. R. Mann.

Assistant Director: Mr. David A. Robertson.

Assistant to the Director: Mr. C. E. Hewitt.

Executive Committee: The Chairman, the Secretary. For 1 year—Dr. Chas. H. Judd, University of Chicago, representing the North Central Association of Colleges and Secondary Schools; President Wm. Mather Lewis, Lafayette College, representing the Association of Urban Universities. For 2 years—Dr. A. W. Harris, 150 Fifth Avenue, New York City, representing the Council of Church Boards of Education (to fill out the unexpired term of Dr. Anson Phelps Stokes); Dean Virginia C. Gildersleeve, Barnard College, representing the American Association of University Women (to fill out the unexpired term of Dr. R. J. Condon). For 3 years—Chancellor S. P. Capen, University of Buffalo, representing the Institute of International Education and the Association of American Medical Colleges; Mr. J. Walter Dietz, Western Electric Company, representing the American Management Association. The Director and the U. S. Commissioner of Education, *ex officio*.

CONSTITUENT MEMBERS AND THEIR DELEGATES FOR 1927-28

AMERICAN ASSOCIATION OF JUNIOR COLLEGES:

Doak S. Campbell, Central College, Conway, Ark.

H. G. Noffsinger, Virginia Intermont College, Bristol, Va.

L. W. Smith, Joliet Junior College, Joliet, Ill.

AMERICAN ASSOCIATION OF TEACHERS COLLEGES:

Noble Lee Garrison, Teachers College, Ypsilanti, Mich.

E. L. Hendricks, State Teachers College, Warrensburg, Mo.

Shelton Phelps, George Peabody College, Nashville, Tenn.

AMERICAN ASSOCIATION OF UNIVERSITY PROFESSORS:

- H. G. Doyle, George Washington University, Washington, D. C.
- H. C. Lancaster, Johns Hopkins University, Baltimore, Md.
- H. W. Tyler, Massachusetts Institute of Technology, Cambridge, Mass.

AMERICAN ASSOCIATION OF UNIVERSITY WOMEN:

- Eleanore Boswell, 1634 Eye Street N.W., Washington, D. C.
- Virginia C. Gildersleeve, Barnard College, New York City.
- Lois Hayden Meek, 1634 Eye Street N.W., Washington, D. C.

AMERICAN LIBRARY ASSOCIATION:

- Harrison Craver, Engineering Society Library, New York City.
- H. H. B. Meyer, Library of Congress, Washington, D. C.
- Ernest C. Richardson, Library of Congress, Washington, D. C.

AMERICAN MANAGEMENT ASSOCIATION:

- J. W. Dietz, Western Electric Co., 195 Broadway, New York City.
- A. S. Donaldson, R. H. Macy & Co., New York City.
- C. R. Dooley, Standard Oil Co., 26 Broadway, New York City.

ASSOCIATION OF AMERICAN COLLEGES:

- S. P. Capen, University of Buffalo, Buffalo, New York.
- W. D. Scott, Northwestern University, Evanston, Ill.
- Guy E. Snavelly, Birmingham-Southern College, Birmingham Ala.

ASSOCIATION OF AMERICAN MEDICAL COLLEGES:

- S. P. Capen, University of Buffalo, Buffalo, New York.
- Burton D. Myers, Indiana University, Bloomington, Ind.
- Fred C. Zapffe, 25 East Washington Street, Chicago, Ill.

ASSOCIATION OF AMERICAN UNIVERSITIES:

- H. V. Ames, University of Pennsylvania, Philadelphia, Pa.
- L. D. Coffman, University of Minnesota, Minneapolis, Minn.
- R. L. Wilbur, Stanford University, Stanford University, Calif.

ASSOCIATION OF COLLEGES AND PREPARATORY SCHOOLS OF THE MIDDLE STATES AND MARYLAND:

- Ralph E. Files, East Orange High School, East Orange, N. J.
- Thomas Sidwell, Sidwell's Friends School, Washington, D. C.
- Mrs. Lucy L. W. Wilson, South Philadelphia High School for Girls, Philadelphia, Pa.

ASSOCIATION OF COLLEGES AND SECONDARY SCHOOLS OF THE SOUTHERN STATES:

Delegates not yet appointed.

ASSOCIATION OF LAND GRANT COLLEGES:

- K. L. Butterfield, Michigan Agricultural College, East Lansing Mich.
- R. D. Hetzel, Pennsylvania State College, State College, Pa.
- R. A. Pearson, University of Maryland, College Park, Md.

ASSOCIATION OF URBAN UNIVERSITIES:

- Thomas S. Baker, Carnegie Institute of Technology, Pittsburgh, Pa.
C. S. Marsh, University of Buffalo, Buffalo, N. Y.
Richard R. Price, University of Minnesota, Minneapolis, Minn.

CATHOLIC EDUCATIONAL ASSOCIATION:

- Rev. P. L. McCormick, Catholic University of America, Washington, D. C.
Rt. Rev. Edward A. Pace, Catholic University of America, Washington, D. C.
Rt. Rev. Thomas J. Shahan, Catholic University of America, Washington, D. C.

COUNCIL OF CHURCH BOARDS OF EDUCATION:

- A. W. Harris, 150 Fifth Avenue, New York City.
Robert L. Kelly, 111 Fifth Avenue, New York City.
H. O. Pritchard, 309 Chamber of Commerce Bldg., Indianapolis, Ind.

COUNCIL ON MEDICAL EDUCATION AND HOSPITALS OF THE AMERICAN MEDICAL ASSOCIATION:

- N. P. Colwell, 535 North Dearborn Street, Chicago, Ill.
Walter F. Donaldson, 8103 Jenkins Arcade, Pittsburgh, Pa.
M. W. Ireland, War Department, Washington, D. C.

DEPARTMENT OF SUPERINTENDENCE:

- Frank W. Ballou, Franklin School Building, Washington, D. C.
R. J. Condon, Denton Building, Cincinnati, Ohio.
S. D. Shankland, 1201 16th St. N. W., Washington, D. C.

INSTITUTE OF INTERNATIONAL EDUCATION:

- S. P. Capen, University of Buffalo, Buffalo, N. Y.
S. P. Duggan, 2 West 45th Street, New York City.
Anson Phelps Stokes, 2408 Massachusetts Avenue N.W., Washington, D. C.

NATIONAL ASSOCIATION OF STATE UNIVERSITIES:

- H. W. Chase, University of North Carolina, Chapel Hill, N. C.
R. M. Hughes, Iowa State College, Ames, Iowa.
Walter A. Jessup, State University of Iowa, Iowa City, Iowa.

NATIONAL EDUCATION ASSOCIATION:

- J. A. C. Chandler, College of William & Mary, Williamsburg, Va.
L. D. Coffman, University of Minnesota, Minneapolis, Minn.
David Kinley, University of Illinois, Urbana, Ill.

NORTH CENTRAL ASSOCIATION OF COLLEGES AND SECONDARY SCHOOLS:

- W. W. Boyd, Western College for Women, Oxford, Ohio.
J. B. Edmonson, University of Michigan, Ann Arbor, Mich.
H. M. Gage, Coe College, Cedar Rapids, Iowa.

SOCIETY FOR THE PROMOTION OF ENGINEERING EDUCATION:

F. L. Bishop, University of Pittsburgh, Pittsburgh, Pa.

Hugh Miller, Union College, Schenectady, N. Y.

W. E. Wickenden, Engineering Societies Bldg., 33 West 39th Street,
New York City.

ASSOCIATE MEMBERS

Alumni Association of American Rhodes Scholars.

American Association for the Advancement of Science.

American Association of Collegiate Registrars.

American Historical Association.

American Institute of Architects.

American-Scandinavian Foundation.

Association of Collegiate Schools of Architecture.

Character Education Institution.

Engineering-Economics Foundation.

Modern Language Association of America.

National Council on Religion in Higher Education.

National Research Council.

National Society of College Teachers of Education.

Religious Education Association.

United Y. M. C. A. Schools.

Institutional Members, 1927-28

ALABAMA:

Alabama Polytechnic Institute
Birmingham-Southern College
Howard College
Marion Institute

ARIZONA:

Arizona, University of

ARKANSAS:

Ouachita College

CALIFORNIA:

California, University of
Dominican College
Mills College
Occidental College
Southern California, Univ. of
Stanford University

COLORADO:

Colorado College
Colorado State Teachers College
Denver, University of
Loretto Heights College

CONNECTICUT:

Connecticut College
Wesleyan University
Yale University

DELAWARE:

Delaware, University of

DISTRICT OF COLUMBIA:

Catholic University of America
George Washington University
Georgetown University
Trinity College

FLORIDA:

Florida State Coll. for Women
Florida, University of

GEORGIA:

Agnes Scott College
Emory University
Shorter College
Wesleyan College

HAWAII:

Hawaii, University of

ILLINOIS:

Carthage College
Chicago, University of
De Paul University
Illinois, University of
Knox College
Lake Forest College
Lewis Institute
Loyola University
Northwestern University
Rockford College
Rosary College
St. Xavier College

INDIANA:

De Pauw University
Indiana University
Notre Dame, University of
Purdue University
Rose Polytechnic Institute
St. Mary's College, Notre Dame
St. Mary-of-the-Woods College

IOWA:

Coe College
Cornell College
Grinnell College
Iowa State College of A. & M. A.
Iowa State Teachers College
Luther College
State University of Iowa

KANSAS:

St. Mary's College
Washburn College
Wichita, Municipal University of

KENTUCKY:

Centre College
Georgetown College
Kentucky, University of
Louisville, University of

LOUISIANA:

Louisiana State Normal College
Louisiana State University
Southwestern Louisiana Inst.

MAINE:

Bates College

MARYLAND:

Goucher College

Hood College

Johns Hopkins University

Maryland, University of

Mt. St. Mary's College

Notre Dame College

St. John's College

MASSACHUSETTS:

Amherst College

Boston College

Boston University

Clark University

Harvard University

Mass. Institute of Technology

Mt. Holyoke College

Radcliffe College

Smith College

Wellesley College

Wheaton College

Williams College

MICHIGAN:

Albion College

Alma College

Detroit, University of

Kalamazoo College

Marygrove College

Michigan, University of

Western State Normal School

MINNESOTA:

Carleton College

College of St. Catherine

College of St. Teresa

Hamline University

Macalester College

Minnesota, University of

St. Olaf College

MISSISSIPPI:

Millsaps College

Mississippi A. & M. College

Mississippi Woman's College

MISSOURI:

Central College

Lindenwood College

MISSOURI—Continued:

The Principia

Missouri, University of

St. Louis University

Washington University

Webster College

Westminster College

MONTANA:

Montana, University of

NEW HAMPSHIRE:

Dartmouth College

New Hampshire, University of

NEW JERSEY:

College of St. Elizabeth

Georgian Court College

Princeton University

Rutgers University

Stevens Institute of Technology

NEW MEXICO:

State University of New Mexico

NEW YORK:

Alfred University

Brooklyn Polytechnic Institute

Buffalo, University of

Colgate University

College of the City of New York

College of Mt. St. Vincent on

Hudson

College of New Rochelle

College of the Sacred Heart

Columbia University

Cornell University

Elmira College

Fordham University

Hamilton College

Hunter College

Manhattan College

New York State College for

Teachers

New York University

Rensselaer Polytechnic Institute

Rochester, University of

Skidmore College

Syracuse, University of

St. Bonaventure's College

NEW YORK—*Continued*:

St. Stephen's College
 Union College
 Vassar College
 Wells College

NORTH CAROLINA:

North Carolina College for
 Women
 North Carolina, University of

OHIO:

Akron, Municipal University of
 Case School of Applied Science
 Cincinnati, University of
 Denison University
 Heidelberg, University of
 Lake Erie College
 Marietta College
 Miami University
 Muskingum College
 Oberlin College
 Ohio State University
 Ohio Wesleyan University
 Otterbein College
 Western Reserve University
 Wittenberg College

OKLAHOMA:

Oklahoma, University of

OREGON:

State Agricultural College

PENNSYLVANIA:

Bryn Mawr College
 Carnegie Inst. of Technology
 Drexel Institute
 Dropsie College
 Grove City College
 Haverford College
 Lafayette College
 Lehigh University
 Marywood College
 Pennsylvania College for Women
 Pennsylvania State College
 Pennsylvania, University of
 Pittsburgh, University of
 Seton Hill College
 St. Vincent College

PENNSYLVANIA—*Continued*:

Swarthmore College
 Temple University
 Villanova College
 Wilson College

SOUTH CAROLINA:

Converse College
 South Carolina, University of
 Winthrop College

SOUTH DAKOTA:

Huron College
 South Dakota State School of
 Mines

TENNESSEE:

Chattanooga, University of
 Southwestern
 Vanderbilt University

TEXAS:

Baylor College for Women
 Baylor University
 College of Industrial Arts
 Incarnate Word College
 Our Lady of the Lake College
 Rice Institute
 Texas, University of

UTAH:

Brigham-Young University
 Utah Agricultural College

VERMONT:

Middlebury College
 Vermont, University of

VIRGINIA:

College of William and Mary
 Sweet Briar College
 Virginia Polytechnic Institute
 Virginia, University of
 Washington and Lee University

WASHINGTON:

Washington, University of

WISCONSIN:

Lawrence College
 Marquette University
 Milwaukee-Downer College
 St. Mary's College
 Wisconsin, University of

WYOMING:

Wyoming, University of

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SUPPLEMENT: Job Specifications

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AMERICAN COUNCIL ON EDUCATION

The Modern Foreign Language Study in the United States¹

"TO INQUIRE into the present situation regarding the teaching of the modern foreign languages in this country and to suggest means for improvement."

This was in brief the task which the Committee on Direction and Control three years ago laid upon the Committee on Investigation, consisting of the Executive Committee and the Special Investigators. The outline adopted at the Atlantic City conference of representative modern language teachers of January 1, 1924, was to serve as the point of beginning of the investigation, which was, in the words of that somewhat ambitious document, to include what is now being done in modern language teaching and what should be done. Indeed, the potentialities of the survey at that moment knew no bounds, and we could sing with the poet,

No pent-up Utica contracts our powers,
But the whole boundless universe is ours.

As soon as the Committee of Investigation passed from the realm of hope and vision to that of actualities, it became clear that neither the three-year period at our disposal, afterwards extended to three and one-fourth years, nor the organizing and executive energy of the Committee was sufficient to realize the whole of this far-flung plan, even though we were backed by an appropriation of \$60,000 per year from the Carnegie Corporation. The preliminary report of the committee presented at the Princeton meeting of the General Committee, January 1, 1925, recommended the limitation of the study to teaching in the secondary schools and the corresponding levels of college instruction, a radical reduction when it is recalled that at Atlantic City we had extended our lines to include everything from

¹ Report of the chairman at the final meeting of the Committee on Direction and Control, held jointly with the Canadian Committee on Modern Languages, Toronto, September 15-17, 1927.

graduate institutions to the correspondence school. The Princeton report had to do almost entirely with the objectives of modern language instruction. Objectives were then, rather more than at present, a sort of fetic in educational theory. We were at that time still in the ban of wartime thinking and practice and believed that it was possible to delimit the objectives of instruction so clearly that the definitions might serve as a guide for every teacher in directing his course. The Classical Investigation, just then concluded, and the seductively dialectical procedure of the men who guided it influenced us to the point where we believed that the attainability or non-attainability of the ultimate objectives of teaching could be demonstrated as clearly as the Rule of Three.

Nevertheless, objectives have remained in a certain sense the guiding principle of our work during the past three years, even though we have re-baptized them as "problems" and have a much more modest conception of the possibility of defining them and of demonstrating to the cautious mind their attainability. (Even at the Princeton meeting it became clear that we lacked one great tool for measuring them, ^{the obvious} viz., standardized tests. As soon as we came under the influence of our Adviser in Educational Psychology, Professor V. A. C. Henmon, we set about remedying this defect. With that move, we had entered on a policy which was to absorb more and more the time of the Committee through the balance of the first and the whole of the second year, and a considerable part of the third year of our labors.) Professor Wood of Columbia and the Iowa Department of Education had already made considerable progress in experimenting with widely standardized modern language tests, and Professor Henmon had published a French vocabulary test based on a frequency study. It was evident, however, that none of these could suffice as tools, or, save to a limited extent, as models, and the members of the Investigating Committees with our Canadian colleagues set down with many misgivings to work out procedures of their own. Like all other voyagers of discovery on uncharted seas, we have been obliged to

feel our way, and the ship has gone ahead only after running here and there into wrong channels and grounding on sand bars, and narrowly escaping a few roaring breakers. Some of these adventures have been very expensive in time and money and entailed losses which were, within our limited time allowance, irretrievable. Nevertheless, we have at present a library of tests covering three capacities—vocabulary, grammar and silent reading—in the four major languages, including alternative forms in French, German and Spanish. We have a choice of technique in French grammar and a set of German reading scales. We have complete manuals for administering tests for three languages, containing keys for the tests and scales for measuring written composition in the foreign language. And we have a highly practical teachers' record sheet for reporting results, which looks simple, but was by no means the least difficult of all of these publications to construct. All of these are commercially available to the entire modern language world² and constitute an equipment with which future experiments in the problems of organization, curriculum and method may be undertaken. We have in addition made successful beginnings with a more difficult member of the test series, a test of aural understanding.

By means of these tests, imperfect and incomplete as they admittedly are, the Committee has been able for the first time in the case of any curriculum subject to measure and record, nationally and regionally, norms of achievement by secondary school pupils. The results of this for the clarification and solution of the problems of modern language teaching will appear in detail in our published reports. This harvest is, however, insignificant in comparison with what may be done with the tests. Not the least important step during the life of the Committee has been the growing recognition by progressive teachers that opinion subjectively formed is valueless unless supported by findings from tests.

²All are published by the World Book Company, Yonkers, N. Y., except the Van Wagenen-Hubman German Reading Scales, which are issued by the Public School Publishing Co., Bloomington, Ill.

An active body of modern language teachers can no longer listen with patience to a program which consists of the iteration of individual opinion regarding methods or organization or the setting forth of results unless success has been measured by reliable tools, such as standardized tests. It is now recognized that the only way to break up the indescribably boring character of teachers' conferences on methods is to demand that every exponent allow his wares to be tested.

If, then, we have been obliged to revise the ideal of the program of October, 1924, for the three years of the Study: the first year, gathering the material; the second, interpreting and tabulating it; and the third year, collating and publishing the results—it is the tests which are to blame. For that we have no apology to offer, even though we are from three to six months behind our schedule.

The great canvasses of fact and opinion which were organized to sound out the present situation in the modern languages have all gone through to a conclusion. If they did not reveal enough to justify all our expectations, they have at least been no disappointment. All of them developed to a magnitude which was appalling, so that the words "Teachers' Training Questionnaire," "High School Questionnaire," "Post Scholastic Questionnaire," etc., have for evermore a profound significance in the minds of all actively connected with the Study. A detailed chronicle of these labors is not possible, and, were I to attempt it, more than of those present would no doubt cry out with Schiller's Wallenstein:

Ersparen Sie's uns. . . .
Zu melden, was wir schaudernd selbst erlebt.

But the frenzy of the day for educational statistics will excuse a few figures, which should be considered in connection with our report of expenditures.

The Teachers' Training Questionnaire was sent to 2,025 departments in 776 universities and colleges. This impressive document was filled out by 749 departments in 412 institutions and the replies codified, tabulated and studied.

The High School Questionnaire was sent to 21,125 public and 2,816 private secondary schools. There were five follow-ups sent to delinquents. Returns came from 13,957 public and 1,973 private schools, of which those from 10,887 public and 1,341 private schools were tabulated. The public schools tabulated represented a total enrollment of 2,635,747 pupils; the private schools, 142,548.

The Registrars' Questionnaire was sent to 776 college and university registrars, of whom 293 made usable returns. These represented an enrollment of 259,000 undergraduates, of whom 148,000 were studying the modern foreign languages.

The Post Scholastic Questionnaire, blue and yellow plague of the regional chairmen, was sent by the Bureau of Education to names listed by the Study of about 18,000 graduates of schools and colleges in the past twenty years. Returns for nearly 7,000 were tabulated and studied by Professor M. V. O'Shea of the University of Wisconsin.³

The Selected Teachers Questionnaire went to 1,650 college and secondary school teachers, of whom 815 filled out a document requiring a minimum of five hours hard work. Many teachers put from ten to twenty hours on the task. The wealth of teacher opinion herein contained may be judged by the fact that it took from three to five workers two months to tabulate the responses.

Our students' and pupils' questionnaire, not yet studied, brought response from 20,000 students of the modern languages.

Our testing program included more than 250 schools and involved the administration of more than 50,000 tests.⁴ The returns from these were scored and studied in the Study offices.

Have the modern language teachers cooperated in the Study? The question is already answered, since they were

³ Published as *The Reading of Modern Foreign Languages*: "Bureau of Education Bulletin (1927)," No. 16.

⁴ In addition a large number were administered in Canada by the Canadian Committee on Modern Languages, and through them about 9,000 were given to secondary school pupils in England.

the direct sources of information and the active workers in every item cited above, with the exception of the Registrars' Questionnaire. In addition, nearly 10,000 teachers of public and 2,150 teachers of private secondary schools sent in their records of preparation and experience, filling out twelve items, all of which were tabulated and studied. But the cooperation of the teachers was not limited to this. It includes also the field of intensive study and experiment. From 100 to 125 teachers cooperated in the creation of each of the three composition scales in French, German and Spanish, putting their experience and experiments with their classes at the disposal of the Study. The French idiom and vocabulary studies have enlisted 100 teachers each, the Spanish idiom count 100, the German idiom count 50, the French syntax study 50, the German error count 50, and so on. In comparison with these thousands of enthusiastic and responsive teachers, the number who have refused help is small indeed.

America is large, and we have grown perhaps too conscious of that fact and too ready to believe that large figures mean a large amount of truth. The Committee on Investigation does not share that opinion but may be pardoned for yielding to the national weakness for a moment in the spirit of appreciation. Operating with round numbers and neglecting some duplicates, who are qualitatively important but quantitatively negligible, the following have taken part in the Study, their share varying from that of the principal of a large high school who signed the returns calculated by painstaking subordinates to the loyal modern language teacher who gave days to the testing campaign:

15,680 school principals.

293 college registrars.

1,500 college teachers of the modern languages.

13,000 secondary school teachers of the modern languages.

7,000 citizens, former students of the modern languages.

In addition to these approximately 37,000 persons, who participated in mass researches, organized in our offices and carried out either there or directly under the control

of the Committee, researches have been developed at a number of universities. These studies, initiated and in most cases under the general guidance of the Committee in cooperation with the Canadian Committee on Modern Languages, have enlisted fifty-six scholars at thirty universities and colleges. This list does not exhaust the number of investigations inspired directly or indirectly by the Study's activities.

Enough has been said to make clear that the findings which the Special Investigators and the Adviser in Educational Psychology set forth in their reports are not hit-or-miss conclusions, based on an arm-chair inquiry, but that whatever faults they may have proceed from errors in interpretation rather than from any lack of willingness to bring in and examine the evidence. In this connection a few quantitative facts as to the activities of the Committee on Investigation may not be out of place. It has held twelve sessions, ten of them separate from meetings of the Committee on Direction and Control: seven in New York and one each in Quebec, Toronto and Boston. In nearly all of these one or more members of the Canadian Committee have sat with us and shared in our counsels. At these conferences the Committee has been in session a total of thirty working days, not counting nights! To these meetings the members of the Committee have journeyed a total of over 40,000 miles. In addition, the Special Investigator and the Adviser in Educational Psychology and Miss Josephine Allin, specially employed to assist them, have traveled between 20,000 and 25,000 miles. In the interests of the Study and its undertakings they have visited every university in the United States that is of importance for research, with one exception, a considerable number of colleges and many, many secondary schools.

All of this has cost, up to August 31 past, \$171,788.22, less than 40 per cent of which has been paid in salaries and wages, including the salaries of the staff and all forms of office and clerical work under direct control of the Study. When concluded the Study will have cost less than one first-class private yacht of moderate tonnage or less than

the latest price paid for one seat on the New York Stock Exchange.

The Committee on Investigation has now concluded its program of fact finding and is now preparing the results for publication. All of its reports could not receive their final form in advance of the last meeting of the Committee on Direction and Control. Even if there had been an abundance of time, it was proper that the larger committee should pass on the recommendations and findings before they are published, for, although the reports have been prepared by the members of the Committee and represent the matured and considered opinion of the Committee on Investigation, they will when they go forth be reports of the Committee on Direction and Control. In view of the magnitude and complexity of the program of the Study, a number of researches and undertakings planned and started by the Committee on Investigation and the Canadian Committee could not be carried through. We feel very acutely the lack of these, especially the lack of various frequency studies in idiom and syntax, as well as the inability to extend further our testing programs. Some of these undertakings, and others which should be initiated, must wait for further subventions and a more liberal allowance of time.

As concerns the stages of completion, the reports and projects of the Study, including those in which it cooperates with the Canadian Committee, fall into three groups:

1. *Those already published or in press.*—This includes the library of tests, with their accompanying manuals, etc., B. D. Wood's *New York Experiments with New Type Modern Language Tests*;⁵ G. T. Buswell's *A Laboratory Study of the Reading of Modern Foreign Languages*;⁶ Buchanan's *Graded Spanish Word Book*;⁷ the Morgan-Henson-Purin *German*

⁵ Published by the Macmillan Company, August, 1927, as Volume I of "Publications of the American and Canadian Committees on Modern Languages."

⁶ Volume II, 1927, of the same series,

⁷ Volume III, 1927, of the series, published by the University of Toronto Press.

Word Book;⁸ O'Shea's report on *Reading of the Modern Languages after Graduation*; and the statistical report,⁸ which is in press.

2. *Those in manuscript awaiting final revision*.—This includes the report on achievement tests, prepared by Professor Henmon, with a chapter on tests in Quebec by Professor Ford of the Canadian Committee; the report on training of teachers by Professor Purin; a summary report on objectives, organization, curriculum and methods by Professor Coleman, and a number of briefer papers reporting on particular studies and experiments in the various fields of inquiry. These latter will probably be published in one volume.

3. *Those for which the material has been gathered but not yet completely collated*.—This includes the French word book, studies in idiom frequency in French, German and Spanish, a study of the frequency of syntactical phenomena of the German verb, a study of errors in German composition, prognosis tests and experiments, etc. It is probable that the series of reports and monographs, appearing as "Publications of the American and Canadian Committees on Modern Languages," will, when concluded, embrace twelve volumes. The studies in French and Spanish syntax frequencies are extensive undertakings which have made appreciable progress. It is probable, however, that they cannot be concluded with the time and means at our disposal.

The Modern Foreign Language Study, like other similar undertakings in recent years, has raised many hopes among workers in the educational field. More than one superintendent of schools has written us that he is waiting for the results of our inquiry before revising the curriculum. More than one teacher, hard pressed by an administration unsympathetic toward the modern languages, is relying upon this Committee to strike off his shackles and restore French and German to their former popularity. A few patriots expect that our deliberations will show to American youth a road to the same readiness in the modern languages as

⁸ To appear as Volume IV and V of our series (Macmillan & Co.).

that which is the equipment of young graduates of the Lycée or the Oberrealschule. Many of these hopes, and other less extravagant ones, are doomed to failure. The Committee has made no startling discoveries; it advances no fundamental changes of plan in curriculum or method. The single radical departure that it puts forward, the two-year reading course, is posited with genuine conviction, to be sure, but with the reservations that accompany a confession of insufficient experiment. The reader will find in these reports no super-syllabus of courses and texts, no oracular declarations as to method, no final decisions on many mooted points. What he will receive in the dozen volumes which we plan is a series of documents setting forth the present situation on the basis of as complete and scientific an investigation as we are able to make and drawing from these only such deductions as seem to us inevitable. The satirical German proverb that to him to whom God gives an office, He also gives the understanding necessary to fill it, has been disproved in our case. We have received no wisdom for the solution of the age-old problems of modern language instruction, and the brevity of the time allowed to us has given no time for the carrying out of the fundamental experiments which might open the way to the solution of some of them. Throughout the reports the authors have sought to cultivate the spirit of tolerance and to avoid finality of judgment. We have husbanded our resources in order that we may publish in full the evidence on which the findings are based.

The Committee will certainly be criticized both for sins of commission and omission. Among those criticisms one will inevitably predominate: That the Committee has given too much time to research into theoretical matters and that its conclusions are too general and abstract. It must accept responsibility for its policy and bear whatever tribulations this may entail with a spirit of Christian fortitude. In answer it can only be said that we have chosen this path knowingly and because we could see no other that would be of ultimate profit to our subject. We know that a perusal and full evaluation of studies involving tests and measure-

ments and the other phases of mass experiments is hard work which most critics will not undertake, but we believe that it is only by way of these procedures that real progress in language teaching can be made. Fine words and oracular declarations are easier reading for teacher and school director, but they lead to no useful end. For the teacher and curriculum-maker no more than for the pupil is there a royal road to the worth-while.

When the Committee did me the honor more than three years ago to choose me as its chairman, I accepted the responsibility with full knowledge that my contribution to the Study would necessarily be a very small one. In this I was not mistaken. But I felt that backed by the group of men and women gathered at Gedney Farms the undertaking could not fail of success. That also was no mistake. In the past three and one-half years I have been twice in Europe for some months and have returned from both visits sadly cast down at the situation in the American colleges and secondary schools, particularly in the modern languages. Each time the spirit of the men connected with this cause has stirred renewed hope. The readiness for sacrifice for higher ideals and the spirit of selfless cooperation are evidence that we shall yet be able to build what will endure.

An acknowledgment of indebtedness under these circumstances is beyond the power of our Committee, certainly of its chairman. Homer declines to name all of the heroes who had a decisive part in the taking of Troy:

Who counts the ships, the warriors all,
Who won great fame at Ilium's fall?

Greater certainly is the number of those who deserve honorable mention at the completion of our work. An exception must be made, however, in favor of certain groups of collaborators. The regional chairmen and their committees have made it possible for us to carry through with some measure of success all of the great fact-finding tasks. When we organized, we were told by experienced persons that regional committees were politically desirable in a curriculum-subject investigation but practically merely hindrances to the

work. I do not know how much they have helped or may help the Study politically, but the practical help of these tireless and unselfish workers has been immense. Unrewarded and almost unthanked, they have carried on through disagreeable and tiresome tasks: surveying local situations, gathering names of graduates from well-nigh inaccessible records, jogging up reluctant and surly school principals, administering and re-administering tests, selecting teachers. They have sought for things to do and, after doing these, have asked for more. The privilege of working with the Canadian colleagues has also been deeply appreciated. As a part of our counsels from the beginning, they have given us the benefit of constant advice and encouragement. Due to the liberal spirit with which they have cooperated, our research program has been a joint one, so far as it has been possible to make it so; our tests are joint constructions; our publications will constitute a joint series. The Commissioner of Education and other officials of the Bureau at Washington have cooperated to the limit of their ability. It is due to them that the Study has been able to develop into a national undertaking.

Of my colleagues on the Executive Committee I can only say that their contributions and sacrifices for the Study have been such as to cause me deep humiliation when I think of the quantity and quality of my own efforts. The three Special Investigators and Professor Henmon belong in a class to themselves. They have taken the gospel of accurate measurement, of research and experiment in modern language teaching, into practically every center of higher studies in the country and have borne to the limit of physical endurance the burden of a rushing, crushing inquiry where the work of months had to be compressed into weeks and often into days. One may with literal truth apply to these modest missionaries some of the things that St. Paul said of himself: "In journeyings often, in perils of rivers, . . . in perils from my countrymen, in perils from the Gentiles, . . . in perils from among false brethren, in labor and travail, in watchings often, in hunger and thirst, in fastings often."

Perhaps when our reports are published they may win, at least in a metaphorical sense, the crown of martyrdom.

Just when all of the publications of the joint committees will see the light cannot be said with exactness, for here we are dependent on the publishers, among other things. But we hope to have the manuscripts in readiness by December 31, 1927.

This will complete the undertaking upon which the Committee on Investigation entered three years ago. As has been repeatedly pointed out, we are far from thinking that our task of research and experiment is finished. Indeed, nothing is more certain than that the results of the testing campaign and the whole program of inquiry show that this work has only just begun. The major problems of modern language teaching demand an organized campaign of experimentation and testing over a period of years in order to come within even approximate distance of solution. Such questions as the effect of the age of beginning upon the pupil's progress in the language, the effect of disuse upon language knowledge and skills, the influence of aural and oral practice upon recognition ability in reading, and *per contra*, the influence of reading upon aural and oral progress, are some of the most important of these questions, but there are very many others. The prognosis problem has been attacked from at least five directions, but the attack has only barely opened. The time has certainly come for a systematic and intensive inquiry into the fundamental psychological processes involved in learning a language. We have now adequate testing instruments for checking some language capacities and are consequently in a vastly improved position as compared with three years ago in seeking answers to these questions—in a better position, without question, than any other curriculum subject in the secondary schools. We need, however, adequate oral tests, scales for testing pronunciation and more efficient techniques in testing silent reading; and we need to experiment with reading courses in order to determine the plan and method by which a maximum of ability in reading may be attained within a limited period.

Furthermore, we have come into contact with a great body of modern language teachers who look hopefully for further guidance. Many of these have cooperated in programs of testing and experimentation and are willing to do so further. To lose touch with them at this time would mean that at some time these relations would have to be established over again, with an almost total loss of the interest and experience which have thus far been developed. In addition, our reports will lose half of their value if left to find their way into the modern language world alone. Some center is needed by which the findings contained in the reports may be further interpreted and the conclusions enforced and translated into suggestions for practical action.

The Executive Committee therefore offered to the Committee on Direction and Control the following resolutions:

1. That the Committee on Direction and Control authorize the Executive Committee to complete the publication of the reports and special studies and liquidate the affairs of the Study as early as possible.

2. That as soon as the publication program shall have been completed, or practically completed, in no case later than April 1, 1928, the present Committee on Investigation be dissolved, its dissolution to take effect on the appointment of the Committee on Modern Language Teaching mentioned below.

3. That the American Council on Education be asked to appoint a Committee on Modern Language Teaching consisting of seven members, two of whom shall be from Canada, all to hold office at the pleasure of the Council.

4. That the Committee on Modern Language Teaching be authorized to raise funds and administer these, as well as all royalties accruing from the sale of American Council Modern Language Tests published by the Modern Foreign Language Study and the Canadian Committee on Modern Languages and other royalties for the following purposes:

- (a) To revise the American Council tests and develop alternative forms.

- (b) To generate and standardize new tests for other language abilities.

(c) To initiate experiments in teaching and learning the modern languages.

(d) To gather information of importance for modern language teaching.

(e) To disseminate information and materials tending to the improvement of modern language teaching.

(f) To take such other steps as may seem desirable to create a higher degree of professional spirit and accomplishment among modern language teachers.

(g) To publish the results of its activities.

(h) To establish when it may seem desirable a center for maintaining contact with the teachers of the modern languages and for the furtherance of this program.⁹

ROBERT HERNDON FIFE,
Chairman.

⁹ These resolutions were adopted by the Committee on Direction and Control at its meeting in Toronto, September 17, 1927.

The Modern Foreign Language Study in Canada¹

AS THE work proceeded, changes had to be made in the methods of conducting the inquiry, and limitations were set on its scope, notably in the matter of experiments. The new technique devised by educational psychologists for carrying on surveys objectively has made obsolete the old procedure of consulting expert opinion, which was always subjective and biased, but rarely unanimous. But the instruments for determining achievement in modern languages did not exist or had not been standardized when the investigation began, with the result that the initial efforts of the two committees had to be spent on the construction of tests in English for French-speaking pupils, French, German, Italian and Spanish. The Canadian Committee was even placed under the necessity of establishing norms for an intelligence test. The lack of such an instrument for controlling the intelligence variable has hitherto made scholastic experiments in Canada impossible. After the language tests were established the Canadian Committee undertook, as its part of the large cooperative effort, to work them extensively in Canada and Great Britain. The results, when combined with those obtained in the United States, provide a mass of material for the standardization of the tests themselves and for comparative and statistical data chiefly on overlapping and malclassification. There has not yet been time to inquire into the reasons for marked superiority or inferiority of certain schools.

While of necessity the original program had to be curtailed, a foundation has been laid for future experimentation on problems of theory and practice that can be solved in no other way. In addition, frequency counts of vocabulary, idiom and syntax, which were undertaken for the prepara-

¹ Introduction to the general report of the Canadian Committee presented by the chairman at the joint meeting of the two committees in Toronto, September 15-17, 1927.

tion of tests, will serve other useful purposes, specifically for sound curriculum construction and the preparation of a new type of textbooks and grammars.

The report also contains an analysis of the present status of modern language teaching in Canada under such headings as teacher training, curricula and examinations, historical and statistical data, bibliographical studies and other matter, the purpose of the Committee being here, as elsewhere in the report, to analyse and explain rather than to expose and criticize.

Those who are entrusted with a survey or the revision of curricula can be expected to do their work in the spirit that prevails at the time of the undertaking. This is in America at the present time the scientific or experimental tendency. The educational world of today is governed by the statistical psychologist, who insists that problems must be submitted to experiment in such a way that all factors can be controlled. Such a scientific spirit precludes dogmatic assertions where absolute certainty is unattainable.

The acceptance of this high standard of procedure and the dearth of working tools have made our efforts very largely of a preliminary or preparatory nature. An illustration of this is seen in the Committee's efforts to solve the problem of the most advantageous age for beginning language study. Experiments conducted by the Committee show that high school pupils learn languages twice as rapidly as pupils in the junior high school, and that college students excel high school pupils in the same ratio. But important variables like intelligence, motivation, teaching methods, curriculum, and so on, could not be eliminated, with the result that the conclusions that might be drawn from the experiments are no more reliable than the *a priori* opinion of many people who believe that the earlier language study is begun the better. To solve this fundamental problem would require many experiments continued over a period of many years and would presuppose revised objectives, and curricula, and teaching methods adapted to the ages under observation. Other problems could be cited to show how difficult it is to establish the new curriculum on a sound basis.

It cannot, and need not be done in haste so long as there are available the excellent conclusions of expert opinion contained in the *Report of the Committee of Twelve* (D. C. Heath & Co.), and *Modern Studies* (with its recent supplement).

Other recent tendencies which militate against precipitate and dogmatic conclusions based on subjective deliberation alone are the insistence of modern educationists that (1) curricula must be based on attainable objectives as determined by experiment; (2) material prescribed for study must have functional value in itself and for life's needs, i.e., we must learn by doing useful things and acquire skills that can be applied. The watchword "function" symbolizes the strong socializing tendency of the pragmatic trend of education; it prescribes useful or practical knowledge; it is the justification for word, idiom and syntax frequency counts, and puts such embarrassing questions as what purpose do modern languages serve? and how well? (3) The work of the classroom must be real and must interest the pupils of the age and grade for whom it is intended. (4) There must be a clearer recognition of the distinction between active and passive knowledge, and minimum essentials, principles which when applied will affect the form and content of our grammars and textbooks, and especially our examinations. (5) A clearer understanding of the formation of bonds and of the psychological nature of drill, and so on. A glance at our grammars and textbooks shows how little psychological processes have been considered in their preparation. (6) Finally, educationists insist upon a better understanding of the fact that values claimed for subjects depend on whether they are, if attainable, recognized and stressed by the teacher.

All these and other trends of modern pedagogy are of very recent origin. Few or none of the underlying principles have been applied to the study of modern languages, because they have been evolved from test results obtained from other subjects and can only gradually receive general application. Such principles or premises do not imply an impairment of high ideals, but they require that higher standards than are possible under present conditions can

only be achieved by improvements in teaching methods. Experiments, such as West² has carried out for reading, now determine the amount, rate and conditions of improvement in reading a foreign language and demonstrate how practice and improvement can be defined and measured. The new principles and methods have also been applied by investigators like Huey and Uhl in the study of the kind of reading that interests different ages, a fundamental principle that has been wholly overlooked in the prescription of texts for modern languages. For a whole subject the results of the new curriculum are best illustrated in Thorndike's *The Psychology of Arithmetic* (The Macmillan Co., New York, 1913) and *The New Methods in Arithmetic* (Chicago, Rand McNally and Co., 1921). As Thorndike puts the matter:

The examination that really counts is fifty years long, its situations are real things and events, it demands mastery of a few things rather than 60 per cent efficiency with many. We cannot of course duplicate it exactly under schoolroom conditions, but we can make our examinations much more like life than they have been. Examinations, like explanations, drills, definitions, and rules, should be for the learner and for life.

Undesirable applications of arithmetic are illustrated by Thorndike in problems like the following:

If Alice were two years older than four times her actual age, she would be as old as her aunt, who is 38 years old. How old is Alice? and Three men walk around a circular island, the circumference of which is 360 miles. A walks 15 miles a day, B 18, C 24. If they start together and walk in the same direction, how many days will elapse before they will be together again?

The same faulty pedagogy is revealed in the sentences by which our pupils are expected to learn languages. Translate:

"Shall we do wrong to Charles's uncle or to yours if we go to the Millers. No, but where are our hats?" "Are you the man that came this morning whose little daughter is ill?" "There is no meat, but we have some very good cheese and I am going to buy some bread."

² *Bilingualism*, Government of India, Occasional Report, No. 13, 1926; and *The Construction of Reading Material for Teaching a Foreign Language*. University of Dacca, 1927.

"Why did you go to the dining room? Because I was very hungry and hoped to find something to eat."³

Translating such absurdities can serve no real purpose either for learning to speak or read a foreign tongue, and discredits the subject.

To complicate still further the task undertaken by our committee, there is at the present what the Germans call a "*Krisenstimmung*" in the very science of linguistics. Not only etymology, which is beyond the scope of the present inquiry, but language in general and grammar, with which we are concerned more directly, are being reorganized on a psychological basis, or so-called psychological, which is often only comparative and subjective, by Brunot, Jespersen, Millet, Bally, Vendreys and others. Since about 1914, an extraordinary number of valuable works have appeared dealing with the subject. These innovators substitute for grammar based on logical considerations a classification that is more nearly in accord with the ideas expressed, a method that has not yet been applied to foreign languages but is available for English in the recent grammar prepared by Palmer.

Phonetics is not indeed a new science, but it is now, more than ever, dependent for development on laboratory experiment, the latest tendency being toward a deeper study of connected speech and intonation.

The new science so briefly characterized above is not as yet applicable to our subject, but the work of our committees is planned to make the reorganization of the modern language curriculum eventually possible. Their efforts during the remaining months of their lease of life should be concentrated on the completion of fundamental works like idiom and syntax counts. The Canadian Committee had hoped to found a journal through which modern language teachers in Canada could be initiated into the new science, but the proposal was rejected by the Conference of Canadian Universities whose sponsorship was requested.

³ Examples chosen at random from contemporary grammars and examination papers.

Contemporary writers on curriculum construction have in mind the large numbers who now seek a liberal education and the demands of innumerable new subjects for recognition. The criterion of subject values is determined in part by aims and functions, but chiefly by the degree in which they are attained, and in which they really contribute to the aims of primary and secondary education, which are defined as social, economic and individualistic. No one disputes the direct values of modern languages for the relatively small numbers of students who study them as a preparation for work at the universities or professional and technical schools. These are special cases. But, for the majority who attend our junior and high schools, the onus of proof rests on the modern language teacher. For the present the psychologist is not in a position to prove that any other subject can profitably take the place of language study; but this may be a temporary advantage and is, at best, insecure ground. It may be assumed that in Canada a good case can be made for the study of French, because of the need for communicating with and understanding our large French-speaking population. But can we prove that, for any of our secondary school pupils outside of the province of Quebec, this aim is ever attained? The methods of teaching that prevail and the nature of our written examinations make one doubt it, and the general public does not believe it. If our objective in the teaching of French is to enable English-speaking pupils to communicate orally with their French-Canadian compatriots, then our methods must make a complete right about face. Whether such an objective can be attained in the classroom, keeping in mind that we have to teach large numbers, can only be determined by experiment; and whether it is the only objective for all of our pupils must also be determined.

Modern language enthusiasts have defined the useful purposes served by their subject in the development of commerce and industry, for keeping abreast of progress in science in its broadest application, and for aesthetic enjoyment. The ability to read at first hand the literatures of other peoples, and to understand and appreciate their spirit

and thought, is a powerful instrument well worthy of much effort to acquire. To be able to converse with people of another race is an additional advantage, but modern language teachers must be sure that what they teach achieves the objective set.

To defend the inclusion of a subject in the modern curriculum is not such an easy task as it was formerly, when an easy-going tradition was the chief determining factor. Recently the moderns fought a battle with the Greek and Latin classics, but the struggle for recognition was an easy one, because the arguments that served for the classics were valid for a more modern form of a similar subject, the historic dominance of linguistic and literary studies in education being from the beginning a recognized fact. But for the recognition of moderns there were additional arguments derived from the growing demands of science, commerce and industry, a new interest in international relations, the increase in travel, and the conviction that the civilization, literature and history of the great nations of today were neglected in comparison with the disproportionate time devoted in our schools to the ancient classics.

New tendencies have arisen which modify the position of moderns considerably. The first is a growing interest in the study of English, the strongest rival at present of our subject. The moderns can still offer much that is not learned through the study of English alone. The teaching of English has as yet failed to secure methods, habits, ideals and attitudes of learning comparable to those secured in foreign languages. The language-thought relation serves to supplement the study of English at the point where the limitations of the latter are greatest. These values are derived from the study of literature, and are, of course, not dissimilar in quality from those claimed for the ancient classics. Buswell's experiments demonstrate, however, that the ability to read modern languages can by proper methods be acquired in the high school, whereas in Latin it is not. West, moreover, proves the transfer of reading ability from the foreign to the native language where a special effort is made to produce the skill.

The moderns can, if properly taught, produce a broadening of interest by enlarging experience; they can provide a valuable basis of comparison with phenomena of our own language, customs, and literature, and they can do something to combat a tendency toward provincialism and extreme nationalism. The importance of *Modern Studies*, the report of an English committee on modern languages, lies in its insistence on a broad concept of modern language teaching. No ideal can reach more than a qualified fulfilment, but it is well for modern language teachers to ponder the pages of this report and try by conscious effort to attain the ideals there set forth.

Educationists accept our claims for direct values and only ask whether the objectives are attained in the classroom. It is, however, the indirect values that they question most critically. They do not now accept the assumption that valuable general abilities are developed through training in specific fields. They seem to admit that improved efficiency, as derived from the mastery of the study of the grammar, language and sounds of a foreign language, can be transferred, and that pupils usually get their first grasp of English grammar from the study of the construction of a foreign tongue. They also grant that certain other mental processes can be developed by conscious effort, but they discredit as transfer values such traditional claims as the training of reason, logic, concentration, the power of observation, and improved skill in writing English. The point which psychologists make is that these qualities can be developed more easily and satisfactorily by more direct efforts; that practice in one kind of learning may facilitate but may also inhibit other kinds of learning; and that desirable methods, ideals and attitudes must be identified first, and then emphasized by the teacher—they do not belong to a subject *per se*. Bobbitt includes moderns only as extras or electives, not to be substituted for the nine basic studies.

In a vast country like Canada it is idle to hope or even to desire that all the provinces or the schools of city and country should adopt the same objectives or adhere to the same methods. On general principles there must always be

variable standards in so complex a subject as modern languages. In some parts of the country, and for clearly defined purposes, greater stress will always be laid on oral proficiency. Elsewhere attention will be concentrated on the development of reading ability.

Consideration of the proper objectives need not be involved, however, in the more difficult pedagogic problem of what is the best approach to the learning of languages for all purposes. The point that alone needs emphasis here is that merely because the modern languages represent living speech in Europe or Quebec is not a sufficient reason for restricting the study of them to those who can or may expect to make practical use of them. Access through reading to modern literature and thought may for many people be sacrificed for the sake of the few who come into contact with foreigners or the French-speaking people of Canada. It is extraordinary what a body of opinion in Europe and elsewhere has swung around to the opinion here expressed. It has been influenced, of course, by the realization that the actual achievement of the classroom, even where, as in certain parts of Canada, conditions seem to be most favorable, falls short of the goal set by enthusiasts, and all to the neglect of attainable objectives. Whatever other purpose the study of modern languages may serve, they must contribute to the education of the pupils who study them.

The fundamental difficulty involved in determining our objectives lies in the effort to reconcile instruction in the use of living languages with the imparting of a liberal education. The old method, which did not at all seek to fathom the true nature of the problem but borrowed its methods from the teaching of the classics, confined its attention to the learning of formal grammar and the deciphering of difficult texts. This method still prevails in Canada and is encouraged by our system of written examinations. A recent visitor to our schools comments critically on the hiatus between the learning of grammatical forms and their application. The reform method shows its influence in Canada chiefly in more attention to pronunciation. Only in one province is the method applied extensively and under proper

supervision. The defects that arise there can be corrected. They consist chiefly of a failure to reach the expected development in range of vocabulary owing to a sacrifice in the amount of reading. Hence, also, there is probably a starving of intellectual interest.

The investigating committee's researches do not enable them to prescribe a new curriculum, but they are unanimous in their opinion, based on observation of present conditions and on the results obtained by West, that our schools could make more progress under present circumstances by stressing reading ability. For this they can offer negative and positive arguments. Some of these are briefly as follows:

1. It is futile now to learn languages for languages' sake; there must be a functional purpose to serve.

2. The classroom cannot reproduce normal conditions for the training of the ability to speak; there is generally too great an interference of English to justify the effort; the language taught is literary in vocabulary and construction, and not the vernacular of real life.

3. The time allowed for language work is too limited for the purpose; in a class of thirty pupils, meeting four times a week in thirty-minute periods, there is a maximum of about four or five minutes per week in which the pupils can use the language, and that allows no time whatsoever for hearing it. If classroom exercises are done in unison, there is, of course, more time for practice than these figures indicate, but at most there is no equivalent offered in the classroom for the ample time that the native child has for developing the use of his mother tongue.

On the positive side and in favor of reading there are the following arguments:

1. Reading is the natural process by which we learn all other scholastic subjects; it is the normal condition that prevails in the classroom and that is continued in real life; reading is possible under most unfavorable conditions, and practice in it need not cease when the pupil no longer hears the foreign tongue.

2. It makes available almost immediately material that conduces to intellectual development; "Realienkunde," now

discredited generally, even in Germany where it began, cannot take the place of a study of the masterpieces of literature, as it cannot give an adequate idea of the real life of the people whose language is being studied.

3. The ability to read can be developed rapidly in the classroom, as West has shown, and the skill developed is carried over to reading in the native language.

4. Because reading can be developed we have an objective that can be attained under the adverse circumstances now prevalent, wherever teachers themselves have little or no opportunity to practice oral proficiency.

5. Reading, if taught with due regard to pronunciation, prepares a grounding for the development of other language uses by providing a vocabulary and a feeling for foreign idiom.

6. Reading provides better deferred or surrender values after a minimum period of study—the lot of the majority of our students—than mere knowledge of pronunciation plus grammar or a small amount of skill in speaking the foreign tongue.

By reading is meant the ability to comprehend ideas expressed in a foreign language, which is different from study of a language for the sake of grammatical analysis or for so-called translation. The kind of reading which the Committee has in mind pre-supposes a new type of grammars and elementary reading texts. Their nature is set forth by West, and his new readers can serve as models. For grammar we have in Canada the new German grammar prepared for Canadian schools by a member of our general committee and a colleague. This, with possible changes in its vocabulary, which can be made when the adaptation of Kaedings *Häufigkeitsworterbuch* is available, will serve excellently for German.

M. A. BUCHANAN, *Chairman.*

What College Man Is Wanted?

EDUCATION of college grade, especially education for business life, has absorbed a large part of the attention which the American public formerly lavished on the public school system. The day was when the city which tolerated or accepted as a matter of course inefficiency and even corruption in most branches of civic administration rose as for a religious pilgrimage at the first breath of scandal or inefficiency in the public school system. But the colleges and universities could then traverse their secluded paths unthreatened by critical attacks from either the business world at large, the parents themselves, or the fond alumni.

The business world was little concerned because until recently the college graduate entered the learned professions of law, medicine, church and engineering, only a few of them finding the road to business administration, and then usually by accident rather than by design. The parent was equally uncritical, for, by and large, the parent, even if a college graduate himself, had few or no standards of appraisal of a college education. In any case to have gone to college—indeed, to have sent a child to college—was still a mark of distinction, and it was therefore too much to expect that other results would be carefully scrutinized.

Popular interest in our colleges has spread noticeably since the war. The numbers attending college have increased beyond our resources for education of college and professional grade. Unfortunately, in some circles a college degree has taken on a certain social value, and this, combined with the increased incomes of all classes of people, has threatened the colleges and universities with inundation. The effort to stem the tide has taken various forms, of which the selective test admission has caught public attention most. When such news has temporarily lost its spice some other morsel, like student suicides, drinking parties, or athletic controversy, is readily at hand out of which to gather up full baskets.

The college has thus quite overshadowed the public schools in the emotional life of the American public and bids fair to absorb it even more.

Of all college graduates, the college man in business is the easiest target for criticism. To begin with, he is new in business and, as a class, is still on the defensive. The first big influx of college men into business consisted of lawyers and took place during and following the merger movement in the early part of the century. The second influx consisted of engineers who at first were employed by business concerns as professional men in a staff or consulting capacity, but latterly the engineers have made up the great proportion of executives in the production end of manufacturing or the operating end of public utilities. The great majority of corporate officers are still non-college men and will be for some decades to come. The lawyers and engineers, naturally enough, question the value of an education dissimilar to theirs, and the non-college executive evidently has reason enough to question the value of the type of college education which has not made available the professional training acquired by the lawyer or engineer and which cannot possibly have provided the information which an equal number of years of practical experience would have made available.

Nevertheless, there are already nearly one hundred colleges of business administration in American colleges and universities, of which 38 are members of the Association of Collegiate Schools of Business. In addition, there are numerous departments of management engineering in the engineering colleges and departments of business administration in the smaller colleges and universities. The number of all of these is growing so fast that it is impracticable to date the latest.

Courses in business administration are so attractive to the college student that departments of economics are suffering a severe drain on their student body except in respect to courses that are requirements of the engineering college or the school of business.

Despite all the criticism of the college graduate in business,

every winter and spring witness innumerable large companies and even many small companies sending representatives to the colleges to recruit not only from the graduating class in engineering but also from the graduating class in the school of business, or even graduates in the arts. Likewise, every year brings its wail of grief from the recent graduate over what he regards as ill treatment, and from business executives over the failure of the recent graduate to become quickly oriented in business.

The mutual recriminations over the place of the recent college graduate in business are of great variety. The business executives' complaints range all the way from lack of ability to spell and to write legibly, to inability to think; from expectation of rapid promotion to unwillingness to work. The college men's protests range from unwillingness to pay a salary with a purchasing power equal to that received by the business executive when he was beginning his career, to caustic criticisms of the management of the business with the inference that the executives cannot do as good a job as the younger generation could.

Out of this mutual dissatisfaction there can surely evolve a more constructive program, and the point of departure in discovering it is to ask the question: What has business the right to expect of a college man that it should not expect of the non-college man? When this question has been answered, a basis has been laid not only for the scope and method of collegiate training for business but also for the process of his selection and his induction into business and the procedure for continuing his training on the job to the end that he and business will each find benefit in his employment.

Fundamentally, there are only two characteristics which should distinguish the college graduate at the time of his employment at the end of his collegiate education:

1. He should have acquired a greater capacity to influence the behavior of and to deal with other men.
2. He should have acquired substantially greater ability to approach the solution of a business problem, however simple, with the use of the tools of scientific method, including a better grasp of ways of arriving at principles of

business administration—in other words, ability to think about a business problem.

The acceptance of this statement of objectives of collegiate education for business immediately removes many of the misconceptions which are at the root of most of the difficulties incident to the placement of the college man in business. In the first place, the business man has no right to expect that the college man's fund of information about business should be exceptional. Valuable as information may be, its acquisition does not constitute scientific training nor make a man a scientist. Yet the fact of the matter is that it has not been unusual for even some of our best known professors of management to emphasize subject matter to be covered and the sequence of courses, the main idea being the acquisition of knowledge about business management or information about management methods. The amount of information about management which college students will obtain in a two, three, or four-year course is relatively unimportant compared with what will be acquired in the first few years of business life. In any case, its value is ephemeral, for the methods of management are developing and changing so rapidly that what is known today has become obsolete in a surprisingly short time. Furthermore, the textbook and collateral reading material used in class are too often already several years old. One need only recall the rapid development of budgeting methods or the radical change in attitude towards methods of employee training to illustrate this point.

What is of permanent value to the student is the acquisition of a technique of investigation as applied to management—the impulse to verify facts, to challenge mere gossip and impressions, the power to use statistical method and to handle historical evidence. To these ends the whole university curriculum may contribute. The classics can be defended not so much by the threadbare argument that one may thus acquire a knowledge of the roots of language and an appreciation of the literature of the centuries, as because they contribute to the technique of getting at the truth. The value of mathematics, modern languages, the physical

and the social sciences lies in the same direction. This is what we have sometimes called "mental discipline."

Similarly, this point of view as to what should distinguish the college graduate ought to affect the attitude of the college man when he first enters business. If he accepts this view, and if his training has been based on a program which emphasizes this view, and if this point of view has been constantly pointed out to him, he will not approach business with the idea that he knows how business is managed or, worse still, that he knows more about how business should be managed than the older men with whom he becomes associated. Similarly, the acceptance of this point of view will substantially affect the attitude of the college professor and the type of work which will be offered to the student.

In the second place, business has no right to expect that the college man should be more proficient in those manual operations like writing, which should have been acquired in the grade or high schools, especially when for a period of years there may have been no external incentive for the maintenance of a previously acquired skill.

Thirdly, neither business executives nor the graduate have any right to believe that the educational process has been completed. We are all coming to recognize that graduation is rightly called "commencement"—commencement of a lifetime of education.

It is becoming more and more generally recognized that the job of an executive is, in very large measure, an educational or training job. It is reported that the executives of one well-known company took the time one day to analyze just what management is in terms of specific activities that must be performed minute by minute and hour by hour in the day. An analysis and classification of these activities led to the conclusion that nine out of ten of them could be classified under education and training. From the president down to the last supervisor, one of the most important functions is that of training their immediate subordinates, not only to do their present work well, but also for promotion. This interpretation of management, which would make of every executive a teacher, might even be carried out

to the last employee who may have a certain obligation to improve the efficiency and ability of his fellow employees because it is usually to his own advantage that the work of his fellow employee shall be done as well as his own—shall be done efficiently. If this point of view is accepted, it is easy to reach the conclusion that the college graduate, if he expects promotion into the ranks of junior executive and then later on to more important executive positions, must have acquired an unusual ability to deal with other men, which is in most respects an educational or training activity.

When business men say that in choosing a college graduate they prefer one who has been active in student organizations, they are by inference recognizing that, in these practical matters of college life, the student who has been a leader has acquired a training through practice in leadership and that means influencing and even training his fellow students. At the present time, such student activities constitute about the only opportunity which the student has for actual practice in the process of leading and training others.

In proposing that participation in intercollegiate athletics should be confined to second and third-year men and that the coaching of the college team should be done by senior students rather than by professional coaches and by alumni, President Hopkins of Dartmouth College has made an extremely valuable suggestion in that it will offer a great educational opportunity for the participation of seniors in college in the training of their juniors—an extremely valuable experience for them.

There are undoubtedly other ways in which the student's ability to lead and train others may be increased. It cannot be gainsaid that knowledge of educational psychology and of teaching methods would be helpful even without actual practice, and it would seem that, to the extent to which formal classroom instruction ought to be a part of training for business life, certainly courses in educational psychology and in teaching or training methods ought to be a requirement for all students who expect to enter business life and who are specializing in the field of business administration.

If opportunity for practice in teaching and training may be considerably increased by such devices as President Hopkins has proposed, or in any other possible ways, so much the better.

It would be very reasonable to assume that graduates of colleges which offer training in the process of teaching and, better still, provide opportunities for practice, would be better equipped to enter the business world and to make rapid progress in the business world than the graduates of colleges which offer no such opportunities.

For instance, salesmanship is largely a teaching process—teaching the buyer—though often it is not sufficiently recognized as such. It would be reasonable to expect that a graduate with a knowledge of educational psychology and teaching methods might make more progress than otherwise as a junior salesman, and in view of the fact that the training of salesmen is becoming the job of the sales supervisor—the district sales manager rather than a headquarters sales school—it would be reasonable to expect that out of the graduates having had such a training in educational psychology and training methods might be readily recruited the future district sales manager of a company.

The same general principle applies to the graduate who may find his way into the accounting or other office departments of a company, or the graduate who finds his way into the production end of the business, all of whom, from apprentice engineer to assistant foreman, foreman, assistant superintendent, etc., have a major responsibility for training their subordinates.

Business today is making vast demands on the man equipped with a scientific method of approach to the solution of business problems. There are more variables in any business situation and the solution of problems through the isolation of particular factors presents greater difficulty today than ever before. "Hunch" methods of appraising a situation are utterly inadequate for the needs of most companies. It takes more than common sense to determine the right answer to most particular situations. The day is long past when methods used by one company can be

adopted without modification by another company, even in the same line of business. This is equally true of the production, financial and marketing ends of the business, and the man equipped with the scientific method of approach to the solution of business problems is the man who is certain to make the greatest progress in modern business with all its complications.

In the production end of business the engineer was at first, in most cases, a staff man. He was engaged chiefly in investigating production problems usually of a mechanical, chemical or electrical nature. Then came a period when the engineer began to apply the same technique of study to production problems which he had formerly applied to more technical problems. More recently, the engineer has in very many cases been put in full charge of the production process, being responsible for executive action as well as recommendations.

The time has come when the man in charge of getting output must at least have an intelligent appreciation of scientific methods of going about solving a problem, even though the actual investigational work may be done by others of lesser status or responsibility. So the scientifically trained man, scientifically trained in the sense that he has a scientific method in going about finding the answer to his problem, is the man who has come to the fore in the production end of the business. The same is becoming equally true of marketing and of finance. It is interesting to note how often the newly elected presidents of companies are men who, instead of merely having dynamic personalities, are also equipped with a training or ability that permits them to direct or at least appraise the scientific studies of subordinates within the organization.

How are these objectives of collegiate education for business to be attained? It must be admitted that a great deal of collegiate education for business has been conducted along lines and with methods which are, to a considerable extent, the fundamental cause of many of the criticisms of the college man in business. This is due in part to the newness of collegiate education for business. It is also due

to the fact that, compared with the attention given to pedagogical methods in the public schools, including high schools, there has been very little discussion of methods of education in schools of college grade. The great majority of college professors, while fully informed on and enthusiastic about the subject matter, have made little study of educational methods, and many of them care very little about it and have no clearly defined understanding of the real objectives of college education or, for that matter, of education in general. The professor enters upon a teaching career because he knows a subject and often enthusiastically devotes his energies to filling the students full of information, and sometimes even is concerned about getting his students to hold the views which he himself holds. Someone recently referred to our colleges and universities as "intellectual filling stations," a very pointed criticism and commentary on the educational methods used in our colleges and universities.

For over fifteen years leaders in educational thought and public school administration have been developing the theory and practice of the project method of teaching as distinguished from the problem method and case method, both of which are certainly a vast advance over the antiquated methods used before the last decade. A project is a problematic act carried to completion in its natural setting.¹ This method has been applied successfully in the fields of manual training, history, mathematics, home economics, geography, civics, and languages in the public schools. In college it has been applied successfully in the fields of engineering, law, medicine, journalism, modern languages, municipal administration, history, mathematics, home economics, civics, biology, English and foreign languages. It represents the most advanced thinking on the subject of educational methods. In the public schools there are many practical difficulties in the application of the method, most of them being due to traditions of the public school system.

¹ "The Project Method of Teaching," by John A. Stevenson. Macmillan Company, 1919.

In some departments of collegiate education tradition presents a difficult barrier in the way of the application of the method to collegiate training. In business itself the method is being used successfully, and illustrations will suffice to show how it is being done.

For instance, in the training of salesmen, the Equitable Life Assurance Society has followed the practice of training salesmen on the job. With brief preliminary instruction, the salesman goes out to sell life insurance. Naturally, he runs into difficulties. He brings those difficulties back to his supervisory officer, who, as frequently as possible, sits down with him individually or in a group and goes over with him the best methods of meeting the difficulties which he has met.

This method of training insurance salesmen meets the definition of the project method of teaching fully. The salesman has a difficulty which constitutes a problem. The salesman has an act to perform in selling the prospect. Responsibility for results rests squarely on him. The information he gets from other salesmen and from his supervisor bears on an actual case. The selling process is carried to completion. It is also done under natural conditions, and the results are an objective measure of achievement.

In the training of apprentices, the Scovill Manufacturing Company puts the apprentice to work under normal working conditions under a supervisor who is responsible for his training. The apprentice is made responsible for results. He runs into difficulties. He seeks light on how those difficulties are to be overcome. With the knowledge acquired he does the work in a natural environment under the normal incentives of compensation and normal conditions of supervision.

The Curtis Publishing Company has applied the same principles to the training of office workers. The new employee begins actual work under normal conditions and is trained by a supervisor in a natural setting under the usual conditions of compensation and surroundings. He is responsible for results. Knowledge and discipline are acquired

in the process of doing actual work and of meeting actual difficulties.

It is easy to understand how training in industry conducted in this way has a vitality and an interest which many of the formal classroom instruction methods of training can never provide. Similarly, is it not reasonable to assume that a student, working on an actual problem in a company under a competent supervisor in normal circumstances of compensation and working conditions, would gain a knowledge of methods of solving business problems which, too, would have vitality and interest and become a permanent part of the equipment of the student for a future business career?

Let us take it for granted, for the time being, that there are administrative procedures and college traditions which are hard to break and which make it difficult to apply the project method of teaching business administration in the undergraduate college. This assumption is made only for the sake of argument, because there are those who believe that even these difficulties can be surmounted and that modern methods of training business executives in industry can also be used in training undergraduates.

An approach to the application of the project method of teaching has been made by the University of Cincinnati, by Antioch College, by Massachusetts Institute of Technology, and by the Engineering College of New York University through the adoption of the cooperative plan by which the student works part time in industry and studies part time in college.

In the training of the graduate student in business administration it is perfectly practicable to apply the project method of teaching in full measure. What is proposed is:

1. That the graduate student should be actively engaged in the study of actual business problems in a company which places on him responsibility for the accuracy and completeness of the facts to be studied, for the interpretation of the facts and for the presentation of the interpretation to those responsible for taking necessary executive action. This implies that the student must be employed as a regular em-

ployee of the company on salary, thus giving his work all of the background and relations necessary if it is to be done in a natural setting.

2. On the assumption that the distinguishing mark of a man trained in a graduate school of business administration is a thorough training in scientific methods of approach to the solution of a business problem, the student must be employed in a department of a company which affords him a full opportunity to do investigational work under complete supervision. For instance, he must work on real problems of marketing rather than actually sell goods, or he may be engaged in a department which analyzes financial statements of companies for financial houses, or he may serve as an apprentice in the planning, research, or industrial engineering department of a company, rather than be engaged as a workman or sub-foreman in a manufacturing plant. If he is working in the field of advertising, his work must be a study of advertising or marketing problems under supervision rather than writing advertising copy.

3. The student must be placed under an executive of the company who can supervise his work, judgment as to the competency of the supervisor being based upon his ability to train the student employee in the technique of business research.

4. The student should be given credit toward his degree for the investigational work done in the company, but before credit is given the supervisor should certify that the quality of work done has been satisfactory to him.

5. The student should also take courses largely in the nature of seminars, the purpose of which should be to bring out in relief the various methods of investigation used in the student apprentice's actual work and to give the student an understanding of those methods of investigation which in his practical work he may not have had opportunity to use to the fullest extent. They will also provide additional guidance in regard to his methods of work, and the whole end of the seminar instruction is that out of his practical experience he may get the fullest possible understanding of all possible methods to be used and the reasons for their use.

Some of the classes or seminars which the student should be required to take as part of a fundamental training in the method of approach to the solution of business problems are:

(a) Statistical method, including principles of statistical method as applied to business; advanced statistical method; graphic presentation, etc., etc.

(b) Accounting, especially advanced accounting and theory of accounts and accounting as a technique of business research.

(c) Certain courses which are more or less of an informative nature, their purpose being:

(1) To round out the student's acquaintanceship with the facts of the business world.

(2) Much more important, to afford opportunity to observe the application of scientific methods of study as applied in the various fields of business, thus bringing clearly to the student's mind the fundamental importance of scientific method in the approach to the solution of a business problem and a consciousness of a universal value and applicability of scientific methods of study rather than business methods themselves which must vary with the individual case. These "content courses" should be taught primarily as a vehicle for the consideration and application of scientific methods of research rather than for their informative value.

This plan of graduate training for a business career meets all of the conditions of the modern project method of teaching. The student, or apprentice investigator, would deal with actual problems. He would be responsible for his results. He would carry his work through to completion. He would do his work in a natural setting, under the ordinary circumstances of compensation and with adequate supervision. His instruction in the classroom would have a vital value in that it would provide information to solve specific, concrete, actual problems rather than hypothetical problems. Much more important, he would gain from these classes and seminars a method of dealing with his problem

which would be put into practical use and therefore become an integral part of his equipment for his future career.

Three other important requirements for a degree—presumably the doctor's degree—should be:

1. That the student should complete an original piece of investigation of a business problem in which he has made use of the fundamental methods used in studying any business problem.

2. He should have prepared a complete statement of the methods of investigation used in his study, a complete exposition of the reasons for the use of the methods involved, a complete statement of alternative methods considered and an exposition of why they were not used. This requirement would force on him the acquisition of a complete grasp of method.

3. He should make a contribution, however small, to the published literature on methods useable in the study of management problems. At least such a contribution should have been accepted for publication. This may be illustrated by, for instance, some development in the technique of interviewing persons who are a source of data; or a statement of an improved method of verifying facts regarding occurrences in the past on which there may be no satisfactory records. Or it might be an improved statement of the proper uses of statistical averages.

It will be recognized that the type of training set forth has been discussed as applying primarily to the advanced student. There is a growing need and, more important, a greater recognition of the need for this type of trained man. Statistical departments and research departments are being established one after the other by companies and in different branches of the companies' activities, for production planning, for forecasting, for market analysis, for research in office methods, for setting sales quotas, for personnel research, etc., etc. One of the larger companies has recently elected as vice-president in charge of research the former comptroller of the company, and this is indicative of the esteem in which business research is held by an increasing number of corporation executives.

It is not to be expected, however, that all college trained men will undertake such advanced work, nor that there would be sufficient opportunities for their activities even if they would do so. What, then, should be the type of training for the student who completes the equivalent of four or five years' preparation for business?

It is too much to hope that they will receive a scientific training at all comparable with that outlined above. Nevertheless, the point of view expressed herein points the way to the type of training which should be given.

Frankly, the type of training which has been altogether too prevalent in collegiate schools of business and in some of the engineering colleges in the past, has given altogether too much attention to information about how business is managed or, worse still, how business should be managed. This has been carried to such extremes that courses are being offered undergraduates in such subjects as salesmanship, marketing methods, advertising copy, office management, personnel administration, corporation finance, exporting, *ad infinitum*, to such an extent as amply to justify Mr. Dwight P. Morrow's statement that many of our universities and colleges are simply "intellectual filling stations." Courses in marketing methods, personnel administration, etc., have a place in the classroom if they are used as vehicles for a training in method. A course in economic history has value partly in providing the background for an understanding of modern business problems but also for providing training in historical method, including the appraisal of historical evidence. This latter, unfortunately—training in method—is a value which has been practically neglected in such courses.

The sooner we get back to the old idea of intellectual training clothed in new garb and carried on by modern teaching methods, the better it will be for the undergraduates and for business concerns who later employ them. In a recent article in the *Atlantic Monthly*, Dr. I. M. Rubinow characterized the atmosphere of the average college campus as that of the resort hotel. With the desire of Americans to embellish our life with what is commonly called "culture,"

the classics and modern languages, philosophy and history and some of the other subjects are being taught altogether too much for the decorative value to the college graduate's later life. The older idea that many of these courses afford mental discipline was a more sound doctrine. They do provide a mental discipline, not merely because they are hard—because to many students they are easy—but rather because the process of study develops the capacity of the student to solve problems whether they be in that field of subject matter or in any other interest field. The deciphering of Latin or Greek sentences calls for practice in the method of getting at the facts, a training that can be transferred to many other fields.

Without going into argument over the respective merits of the various subjects on the college curriculum, it may be readily conceded that mathematics and the physical sciences adapt themselves more obviously than others to the opportunity for giving a thorough training in scientific method which will be most useful in finding the answer to any sort of life problem.

As we have set forth above, the modern project method of teaching implies that, before facts are discovered and principles developed, a problem must have been raised which the student, whether in college or out, undertakes to solve. This principle explains the very important corollary which has often taken the form of the statement that the real functions of the good teacher is properly to raise problems rather than to solve them for the student. It may be deduced from this statement that those college courses which deal with subject matter and problems in which the student's interest may be quickly and effectively raised are probably the best courses from an educational viewpoint. It is a comparatively easy matter, for instance, to whet the student's appetite to know whether trade unionism, as it exists at present, is a permanent factor in business and society. Once that question has been fairly raised, it is an easy matter to create his interest in economic history as the background for the study of the growth of labor organization. Similarly, it is easy to stir up the student's interest

in the problem whether large scale industry is really to increase or whether it will decline or whether it will be permanently successful. Having done so, it is easy to set him on the quest of discovering what factors enter into the situation or, to state it in more general terms, to stimulate his own activities to the end that he may acquire a greater ability to study and think about any sort of problem, including business problems.

Of course, there are certain courses easily taught in the classroom which have almost direct value for a future business career. These include, for instance, statistical method and accounting. One of the difficulties with undergraduate instruction in statistical method as training for business is that statistical data regarding business problems are usually not available for study by the undergraduate. There is, however, any amount of statistical data available from government reports which lend themselves to analysis through the application of even rather advanced statistical methods. The technique gained in analyzing such material is easily adapted to later use in the business field. Training in accounting can be adapted with reasonable ease to the classroom procedure, though it is to be doubted whether undergraduate instruction in accounting should be carried into much detail.

There is another tendency of the time from which we may expect further development. Business men are generally familiar with the cooperative plan originated at the University of Cincinnati and used by the Massachusetts Institute of Technology, by the Engineering College of New York University, and more recently by Antioch College. This plan has the distinct advantage of putting the student face to face with actual business problems. In the course of his several weeks activities within a company, he comes face to face with problems which he solves more or less on the spot and which he has the opportunity to study further under guidance during the weeks spent in college. His practical work has made these problems real to him, and the data he gets either during his work or in college, and the methods he uses in finding the answer to his problems, become a real

part of his education and prepare him in a vital way for his future business career. It is my observation that men trained in this sort of atmosphere are vastly more tolerant toward company practices than are those who are given instruction, without anything like equal contact with business, in how business is run or how business should be run.

The nearer we can come to sending out from our colleges men who feel that graduation is truly the commencement of a lifetime of education, the more tolerant they will be of their conditions of employment, the less unsettled they will be during the dangerous first few years after graduation, the more they will grow towards positions of responsibility, and the better will business executives be satisfied with the men whom they so eagerly employ.

Nothing will contribute so much to giving the college man the proper attitude toward his first years in business as the removal from the college curriculum of those courses which tend to make him think that he knows how business is managed, unless it be a frank avowal on the part of our colleges and universities that their function is to give the student a mental training with which he may more effectively, in the course of actual experience, study actual business problems and more quickly than the non-college man learn in after college days how to manage a business.

W. J. DONALD,

Managing Director, American Management Association.

College Entrance Requirements*

COLLEGE entrance requirements are the complex result of many factors, intricately related. Those involve: the desire of students to go to college and the desire of parents and friends to have them go; the success of students in making evident their ability, accomplishment, and aptitude, either informally to their teachers through a considerable period of years, or at a given place and hour in a formal examination or test; the careful or informal judgment of teachers and advisers as to the character and promise of students; the reasoned or traditional views of examiners concerning methods of judging student ability and prospects; the entire system of social ideals and desires as to what schools and colleges and other educational agencies can and should do for students and the public welfare; the belief of schools that they should provide whatever curricula they believe to be best for their students, and that such curricula should admit students to college, the school curricula thus dominating those of the college; the belief of colleges that they should provide whatever curricula they believe to be best for their students, fix their entrance requirements accordingly, and thus dominate the curricula of the schools; the desire of schools to be able to send all of their students to college, conflicting with the desire to send only those that will do the school most credit; the desire of colleges, at times, to secure the largest possible number of students, and the ability of colleges at other times to select from a larger number of applicants than they can accommodate; the desire of all concerned to give each student every consideration, frequently made ineffective by such great numbers of students that no one can be given adequate consideration. Probably the only way in which these and

*A chapter from a forthcoming volume on the Efficient College, edited by Dr. Robert L. Kelly, Secretary of the Association of American Colleges, to be published by that Association.

sundry similar influences can be observed and appraised clearly is by approaching them in something like chronological order.

Requirements for entering the various universities and colleges in the United States were, from their beginning until very recently, highly individualistic, in respect to both quantity and kinds of preparation. Only within the present generation have those requirements come to be understood as representing relations among college, school, student, and public that should recognize the interests of all as fully as possible, particularly in the matters of reasonably high standards and reasonable uniformity or equivalence.

The origin of the new tendency appears to have been the definition of a college adopted by the New York State Department of Education in 1895. This included the qualification that such an institution "should require for admission not less than the usual four years of academic or high school preparation, or its equivalent, in addition to the pre-academic or grammar school studies." It is easy to forget how great a change was brought about by the general adoption of this definition. Less than half a dozen universities and colleges in the South had such a requirement in 1905 and only two of all the state universities in the country had such a requirement in 1909. Only fifty institutions announced such a requirement in 1908, one hundred in 1911, three hundred in 1913.¹ Since 1918 it has become practically universal. During the same period there was a progressive abandonment of the preparatory schools that were conducted by colleges and a steady decrease in the number of students who were admitted without fulfilling all of the announced requirements. Whereas in 1907 more than half of the students who were admitted to Harvard, Yale, Columbia, and Princeton fell short in some particular, only 14 per cent of all the students admitted to college in the Middle Atlantic States in 1924 were entered with conditions.^{1,5}

Meanwhile the excessive variety in the details of entrance

¹ Carnegie Foundation. Sixteenth Annual Report, 1921, pages 73-81.

requirements was becoming intolerable to the schools and embarrassing to the colleges. The schools were obliged to conduct almost as many curricula as there were colleges for which students were being prepared. The colleges found it increasingly difficult to secure students who were prepared to meet their peculiar requirements. Between 1880 and 1900 all of the regional associations of colleges and secondary schools, many such associations in the several states, and numerous other representative organizations recommended greater uniformity in entrance requirements.

A general improvement in this direction began with the inauguration of the College Entrance Examination Board in 1900. It invented the simple device of a college entrance unit, representing the amount of work accomplished in one period a day throughout a year in a good secondary school—sixteen units representing a complete secondary curriculum—and conveniently translated into these units the recommendations of representative associations devoted to the separate subjects, such as English, the classics, mathematics, and history. These devices were approved by the National Conference Committee on Standards of Colleges and Secondary Schools in 1906 and were thereafter rapidly adopted throughout the country. Their use by the Carnegie Foundation in its studies of universities and colleges caused them to be spoken of frequently as "Carnegie units."

These measures proved of service in the interests of both precision and flexibility. A survey of the admission requirements in 1912 and in 1920 of the 125 universities and colleges that were approved by the Association of American Universities in 1918² made clear the following facts. The propor-

² Information for 1912 based largely upon U. S. Bureau of Education Bulletin 7, 1913, by Clarence M. Kingsley. Information for 1920-21 collected for the Association of American Colleges (Bulletin VII: 2, March, 1921); the College Entrance Examination Board (meeting of April 16, 1921); the National Conference Committee on Standards of Colleges and Secondary Schools (Proceedings, March 10, 1921; *School Life*, VI: 8, April 15, 1921; *School Review*, XXIX: 6, June, 1921); and the New England Association of Colleges and Secondary Schools (meeting of April 1, 1921).

tion of these institutions that had a single set of requirements for admission to all of their academic college curricula had increased from one-half to two-thirds. The absolute prescription of certain subjects for college entrance, although varying in different sections of the country, had decreased in quantity from eight to seven of the fourteen and a half to fifteen and a half units required for entrance. The proportion of the requirement devoted to alternate subjects, such as Latin or Greek, physics or chemistry, increased from two and one-half to three units. The proportion of the requirement allotted to elective subjects, to be chosen at will from a considerable list, increased from three and one-half to four units. The proportion of units representing an absolutely free choice of subjects increased from one-half to one and one-half units. All of these movements were in the direction of greater flexibility in the requirements of the colleges and greater freedom for the school. Many state universities have now adapted their curricula to the belief of the public schools that their teaching should be determined by the needs of the nine-tenths of their students who do not go to college and that their graduates should be admitted to college no matter what they have studied in school.

The entrance requirements in 1920 differed somewhat in various groups of institutions. Those belonging to the North Central Association of Colleges and Secondary Schools, the Association of Urban Universities, and the National Association of State Universities had the smallest proportion of prescribed subjects, 41 per cent, and the largest proportions of free units, 15 per cent, 12 per cent, and 11 per cent, respectively. Institutions belonging to the College Entrance Examination Board and the Association of Colleges and Secondary Schools of the Middle States and Maryland had the largest proportion of prescribed subjects, 50 per cent, and a small proportion of free units, 3.5 per cent and 4.6 per cent. Institutions belonging to the New England Association of Colleges and Secondary Schools and the New England College Entrance Certificate Board prescribed 50 per cent and 48 per cent of their requirement but allowed 8

per cent of entire freedom. The colleges of the Association of Colleges and Secondary Schools of the Southern States occupied a middle position of prescribing only 45 per cent but allowing only 2 per cent of absolute freedom.

With regard to the relative importance attributed to various subjects there was no change between 1912 and 1920 in the order of those most frequently prescribed, namely, English, Mathematics, Latin, and the History-Civics-Economics group. These represented 90 per cent of all prescriptions in 1912 and 94 per cent in 1920. For prescribed, alternate, and elective subjects taken together the order was the same, and German and French came next, both in 1912 and 1920. The continued predominance of traditional subjects, the continued preference of German over French, and the small emphasis given to science and to vocational subjects, are all noteworthy.

The importance attributed to the several subjects in 1920 varied with the groups of institutions. Among the prescribed subjects, English was first and Mathematics second in all of the groups. Foreign languages were third in the Middle States, Examination Board, the New England, and the Southern Association colleges; fourth in the New England Certificate and Urban groups; and fifth in the State and North Central institutions. History was third with the North Central, State, Urban, and New England Certificate groups; fourth with all of the others. Science was the least frequent subject in all of the groups except the North Central and State associations, where it held fourth place. Taking prescriptions, alternates, and electives together, all groups gave first place to English and second place to Mathematics except the Middle States institutions, which placed foreign languages second. The New England Association, Examination Board, and Southern institutions placed foreign languages third; the Certificate Board and Urban Universities placed them fourth; the North Central and State Universities places them fifth. History was third with the Certificate Board, North Central, State, and Urban groups, fourth with the others. Science was last except in the State

Universities, which placed foreign languages there. Among the foreign languages, Latin was everywhere the favorite. German was still next in popularity; French next, quite closely; Greek next; and Spanish last.

Studies of the actual working of entrance requirements have been made for considerable groups of students—8,826 who matriculated in 1921 in forty institutions belonging to the Association of Colleges and Secondary Schools of the Southern States,³ 6,649 matriculating in 1922 in twenty institutions in Massachusetts,⁴ and 15,389 matriculating in 1924 in seventy-nine institutions belonging to the Association of Colleges and Secondary Schools of the Middle States and Maryland.⁵ Both comparisons and summaries of these studies are suggestive.⁶

Of these matriculants in the Middle States 66 per cent were men, as compared with 65 per cent in the Southern States and 64 per cent in Massachusetts. The average age of all matriculants was 18.9 years in Massachusetts, 18.5 years in the other sections. The average age of the men matriculants was 19.1 years in Massachusetts, 18.7 in the Middle, and 18.6 in the Southern states; that of the women 18.6 years in Massachusetts, 18.4 in the Southern, and 18.2 in the Middle States. Previous graduation from a secondary school was reported by 90 per cent of the matriculants in the Middle States and 89 per cent of the Southern matriculants, but for only 50 per cent of those in Massachusetts. Admission was wholly on the basis of certificates in 97 per cent of the Southern matriculations, 79 per cent of those in the Middle States, and 46 per cent of those in Massachusetts. In Massachusetts 21 per cent were admitted with conditions, in the Southern States 18 per cent, in the Middle States 14

³ Twenty-sixth Proceedings, 1921, pages 135-151.

⁴ Report of the Legislative Commission on Higher Education in Massachusetts. House document 1700. 1923, pages 71-84, 312-321.

⁵ Thirty-ninth Proceedings. 1926, pages 52-77.

⁶ Association of American Colleges Bulletin. Volume VII, Number 2, March, 1921; IX, 4, November, 1923; X, 3, May, 1924; XII, 4, November, 1926.

per cent. The average requirement for entrance was 15.5 units in Massachusetts, 15 in the other regions. Of these units the Southern institutions prescribed 51.5 per cent, the Middle States 49 per cent, Massachusetts 44.5 per cent. There were recommended, as alternate or elective subjects, 46 per cent in the South, 45 per cent in the Middle States, 40 per cent in Massachusetts. Massachusetts allowed 15.5 per cent entire freedom, the Middle States 6 per cent, the Southern 2.5 per cent.

A comparison of the subjects prescribed and recommended by the colleges and those presented for entrance by matriculants in these colleges indicates that as the colleges grew more liberal in their requirements their matriculants offered an increasing excess of work over the requirements in the traditional subjects, took little advantage of the opportunity to present vocational subjects, and used but a small part of the entire freedom of choice allowed them. Thus, in response to a prescription of English amounting to about 20 per cent of the entire entrance requirement in each group of institutions, the matriculants in each group devoted more than 20 per cent of the units that they presented to English. Mathematics represented in each group about 18 per cent of the requirement; in each group the matriculants offered more than the prescription and the recommendation in that subject. The combined prescription and recommendation in history were 7 per cent in Massachusetts, 8 per cent in the Middle, and 10 per cent in the Southern States; of the units presented 11, 13, and 19 per cent were in this subject. A similar relation prevailed in foreign languages and science. On the other hand, although Massachusetts allowed 20 per cent, the Middle States 17 per cent, and the Southern States 15 per cent of the requirement to be met by subjects that have not been mentioned, the students chose to offer only 1, 9, and 5 per cent respectively, in such subjects. The representative, average, program of secondary work presented by 30,864 students for matriculation and accepted by 139 representative institutions in 1921, 1922, and 1924, was made up of four units of Latin, three each of English and of mathe-

matics, two each of French and of history, and one each of physics and of chemistry.

A large measure of individuality still prevails among universities and colleges in the administration of their entrance requirements. The great majority have always depended primarily upon a certified record from the secondary school of what the student had accomplished in that institution. A small number of the oldest and best known institutions, located in the North Atlantic States, have depended primarily upon examinations conducted by the college or some other agency separate from the school. Recently there have been combinations of these two methods, more of the certifying colleges adding examinations to their certificates and a considerable number of the examining colleges adding certificates to their examinations. Meanwhile, both certificates and written examinations have been increasingly supplemented by psychological examinations similar to those that were developed in classifying the members of the United States Army during the World War. Even more recently the personal recommendations of students that have been required by most colleges and the character ratings and personal interviews that have been required by a few have been developing in the direction of scientific appraisals. All of this is in harmony with the tendency to make the whole procedure of admissions more professional. A recent study of such procedure in the institutions belonging to the Association of Colleges and Secondary Schools of the Middle States⁷ shows that, while many institutions still entrust these matters to committees, the larger institutions are much more apt to entrust them to a single expert officer.

The College Entrance Examination Board is the center for the perhaps 5 per cent of the students of the country who enter college by examination. In 1901 the Board gave 7,889 examinations to 973 candidates from 237 different schools; in June, 1927, it gave 74,958 examinations to 22,384 candidates from 1,976 schools. It is scarcely possible to

⁷ Fortieth Proceedings. 1927.

imagine a more representative, impartial, and adequate method of preparing, giving, and marking written examinations. Both those who believe in such examinations and those who do not are agreed that the work of the College Entrance Examination Board may be taken as an epitome of the merits and limitations inherent in the nature of written examinations. The Board's examinations are based upon the standards of representative organizations in the several academic fields, such as the National Conference on Uniform Requirements in English, the American Historical Association, the American Philological Association, and the Modern Language Association. The papers in the several subjects are prepared by committees of examiners, and approved or amended by a committee of revision, in the light of the experience of the Board's readers in the different subjects, and of public comment on earlier examinations, all of which are published after they are given. These various groups of examiners, revisers, and readers are all made up of men and women teachers, experienced in both schools and colleges, in various parts of the country.

The operations of the Board, at its request and with its cooperation, have been twice examined by the Carnegie Foundation. In 1923^a its organization and administration were pronounced remarkably efficient and economical. The average age of the candidates varied from a minimum of 17 in 1918 to a maximum of 18 in 1920, the median ages from a minimum of 17.5 in 1919 to a maximum 18.4 in 1920. About one-third had come from public schools. Originally most of the candidates came from the Middle States; those from New England began to predominate in 1910; the number of those from other parts of the country have increased since 1919. Two-thirds of the examiners who prepared the papers have been from New England, one-third from secondary schools. Elaborate statistical study showed no relation between the proportion of examiners from any region and the proportion of successful candidates from the same region. Of the whole

^a Reprint from the minutes of the Board, April 21, 1923.

number of examinations taken, the proportion of those devoted to the subject of English remained stationary, it increased in history and mathematics, doubled in science, decreased considerably in ancient languages and somewhat in modern languages. Beginning with 1915, the Board has provided comprehensive examinations for the convenience of those colleges that allow students to choose several subjects, usually four, for extensive examinations, instead of more limited tests in every subject that they present for entrance. This "New Plan" is adopted by from 12 to 16 per cent of the candidates. Since 1916 there has been an increase in the proportion of candidates who have passed and of those who have passed with good and with very good marks. The readers of the examination books were at first chiefly from the Middle States; now about one-half are from New England. Originally two-thirds were from colleges; now two-thirds are from secondary schools. The proportion of women among the readers has increased from one-fifth to one-fourth. No relation was found between the proportion of readers from any region and the proportion of candidates from that region who passed, or between the proportion of readers from secondary schools and the proportion of candidates who passed. Although sundry readers have served for long terms, the increase in the number of readers has kept the average term of service down to three or four years. There appeared to be no relation between the proportion of experienced readers in specific subjects and the proportion of candidates who passed in those subjects, or between the proportion of students passing in any subject and the number of books read by the average reader in that subject. Concluding with the weather, there appeared to be but little relation between relatively high or low temperature during the periods when books were written and read, and the proportion of candidates who passed at those times. In fine, extensive and minute investigation did not shake but rather confirmed confidence in these examinations.

The secondary enquiry of the Foundation into the work of

the Board took the form of requesting a dozen teachers of English at Oxford, including both men and women deans, fellows, tutors, lecturers, and examiners, to read and comment critically upon sixteen of the Board's recent examination papers in English. A careful study of the extensive comments of the English teachers⁹ resulted in the conclusion that these comments "quite obviously represent the varying views of individuals and small coteries, such as the College Entrance Examination Board was established a quarter of a century ago to replace by the cumulative experience and judgment of widely representative groups."

Within a decade psychologists have developed new types of mental tests that are of undoubted value for purposes of college entrance. Although their usefulness has been retarded by extravagant claims that they test "intelligence" and may be made the basis of "intelligence quotients," they demonstrably provide new and valuable methods of estimating suitability for college study. A demonstration of their usefulness for this purpose was made by the Carnegie Foundation in its study of Engineering Education, published shortly before the entrance of the United States into the World War.¹⁰ Following the great development of such tests in the Army,¹¹ the College Entrance Examination Board developed a series of "Scholastic Aptitude Tests" which may be taken under the same conditions as its other examinations,¹² and the American Council on Education¹³ has provided psychological tests for freshmen in about two hundred colleges. Sufficient data have now accumulated to make possible the comparison and evaluation of the various

⁹ Twentieth Annual Report of the Carnegie Foundation, 1925. pp. 118-131.

¹⁰ Bulletin number eleven. 1918.

¹¹ National Academy of Sciences. Memoir XV. Psychological Examining in the United States Army, 1921.

¹² The work of the College Entrance Examination Board. 1901-25. Published by the Board, 1926.

¹³ *Educational Record*, VIII, 3, July, 1927, page 233.

methods of appraising the suitability of students for college entrance.¹⁴

All examinations and tests have the limitations of their excellent qualities of definiteness and precision. Lack of correspondence between the aim of an examination and the most characteristic qualities of a student not infrequently causes the procedure of testing to result in mere distress rather than helpful diagnosis. The excellent informality and flexibility of certification, on the other hand, too often become so careless and perfunctory that the result is practically worthless or positively misleading. Various regional and state associations of colleges and schools, state departments of education, and individual colleges have, therefore, from time to time adopted and recommended forms of certificates that their experience has shown to be desirable, have carried on statistical studies of the results of their use, and, by means of reports and, not infrequently, visits of inspection, have developed lists of schools that appear to deserve certificate privileges because of the work that their students have done in college. Although these devices give greater advantages to inferior students from superior schools than to more gifted students from lesser schools, they have been, in the main, of much service to both schools and colleges. The most conspicuous example is perhaps that of the New England College Entrance Certificate Board which, since its establishment in 1902, has compared the accomplishment of students in school with what they did later in college. This has resulted not only in the development of an increasingly trustworthy list of schools that are deemed worthy of the privilege of sending their students to college on certificate, but frequently in the illumination of the colleges as to the success of their own operations. When graduates of a particular school do poorly in several colleges

¹⁴Stephen S. Colvin: "Intelligence of Seniors in the High Schools of Massachusetts," Bulletin of the United States Bureau of Education, No. 10, 1924.

Lewis M. Tierman: "Mental and Physical Traits of a Thousand Gifted Children." 1925.

Edward L. Thorndike: "The Measurement of Intelligence." 1926, 616 pp.

a re-enquiry concerning the school is indicated. Colleges, on the other hand, have found it helpful to enquire into their own procedure, when graduates of several schools are reported as doing poorly in one or more departments, while graduates of the same group of schools do excellently in the same departments in other colleges. The institutions that belong to the New England College Entrance Certificate Board agree to accept certificates from all of the schools on its approved list and from those schools only, thereby assuring both the excellence of the list and emulation among schools to secure a place upon it. A recent study of certificate procedure in the Middle Atlantic States⁷ indicates that one college in that region depends wholly upon the list of schools approved by the regional association, 14 depend wholly upon their own lists, 16 wholly upon state lists, one combines the association list with its own, 8 combine their own with state lists, 16 combine state and association lists; only 8 report using all of the information available, in a combination of association, institutional, and state lists.

Studies have been made of the college entrance certificates used by 110 universities and colleges in 1915¹⁵ and by 143 universities and colleges in 1922.¹⁶ A comparison of these masses of data indicates a growing tendency toward uniformity. Whereas, at the earlier date, there were many blanks of highly individual character, varying in size from that of a postcard to sheets a foot long and a yard wide, at the later date from two-thirds to three-fourths of the blanks were of the customary business-letter size, printed for flat filing. There was an increase in emphasis on the obviously essential elements of information and a striking increase in the number of institutions that desired specific information concerning laboratory work and concerning the year of the curriculum in which certain courses had been taken.

The most striking difference between the certificates of

¹⁵ Proceedings of the American Association of Collegiate Registrars, 1916, pages 58ff; Eleventh Annual Report of the Carnegie Foundation, 1916, pp. 131-8.

¹⁶ American Council on Education, *Educational Record*, V. 4, October, 1924, pp. 242-6.

1915 and that of 1922 is a tendency to ask for personal data. Scarcely any institutions in 1915, but three-fourths of the whole number in 1922, requested information concerning such matters as the date and place of the student's birth; his special interests with regard to study, athletics, and self-support; his intentions with regard to college and vocation; his school offices, honors, and other activities; his parents' nationality, educational training, and business or profession. From persons other than the student questions were asked concerning his character, ability, integrity, health, promise, industry, seriousness, good-fellowship, and the like.

The comparative study that has been mentioned¹⁶ noted the importance of such information but also that the manner in which it was requested and, apparently, the use to which it was put by colleges, appeared to be as yet almost wholly informal and unorganized. The suggestion was made that it would be a signal service to education should a committee of psychologists, statisticians, administrators, and teachers already expert in such matters, study the present and possible use of such personal data and recommend generally available methods of selecting, securing, and recording traits of behavior which may be clearly distinguished and compared, possibly measured, and certainly employed by college officers and teachers as suggestions for the student's further development. Happily such a committee has now been organized, provided with suitable resources, and is at work under the auspices of the American Council on Education.¹⁷

Finally, it is a pleasure to recognize that the most progressive institutions in administering their entrance requirements do not depend exclusively upon any one form of machinery, whether this be in the form of certificates, written or psychological examinations, personal recommendations, ratings, or interviews, but use a combination of most or all of these devices, and perhaps of others in addition. In a few universities the endeavor to understand the nature and needs of prospective students has become so complete and disinterested that it not infrequently results in the guidance of stu-

¹⁷ *Educational Record*, VIII, 3, July, 1927, p. 235.

dents, for their greater good, toward other institutions or toward some quite different, unacademic, career. Should this tendency develop, it may far transcend in social usefulness all procedures that are directed toward college entrance alone. Even at present there is probably no other procedure in the student's entire academic life so significant as that of his admission to college; certainly there is no other single activity of a university or college that is so suggestive an indication of an institution's measure of enlightenment.

CLYDE FURST,

Personnel Methods in College

THROUGH the generosity of Mr. John D. Rockefeller, Jr., who has granted \$20,000 a year for three years to the American Council on Education, the Council is able to organize a cooperative experiment in college personnel procedure.

The widespread interest in personnel methods affecting industry, the professions and the colleges was precipitated January 1, 1925, in a meeting called by the National Research Council, Division of Anthropology. This National Research Council Conference on Vocational Guidance in Colleges was attended by representatives of fourteen universities and colleges, who were constituted an Advisory Council with power to increase its membership. Dean H. E. Hawkes of Columbia University was elected chairman of the Advisory Council and also of the Executive Committee of five, which the chairman was authorized to appoint. The Executive Committee, Messrs. Hawkes (Columbia), Holmes (Harvard), Mann (American Council on Education), Scott (Northwestern), and Wellman (Dartmouth), prepared many memoranda and endeavored to secure financial support. From the Benevolent Fund of John D. Rockefeller, Jr., a grant was received in 1925 which made possible a study of personnel procedure in fourteen institutions.

The report of this study by Mr. L. B. Hopkins, formerly of Northwestern University and now President of Wabash College, was printed as a supplement to the *EDUCATIONAL RECORD* in October, 1926. It is available in the form of a reprint. Mr. Hopkins showed that among these institutions there exists a widespread interest in modern personnel methods and a widely variant practice in the application of them. The following table, reprinted from the report, shows Mr. Hopkins' ratings of the fourteen institutions in respect to several forms of personnel procedure. It will be noted that the estimates are recorded in terms of A, B, or O. These letters are used to indicate Mr. Hopkins' impressions. In cases where the work was being done in a way that

appeared to Mr. Hopkins of enough significance to make it worth while for other institutions to learn about it, he used the designation A. In cases where something was being done and the manner of doing it seemed creditable but not outstanding, he used the designation B. Wherever an item is rated O, it means that that work was either not being done at all or that such work as was attempted was not effective. It is obvious on this basis of rating that two institutions may have A in the same item and yet not be following the same procedure. In fact, he found that this was more often the

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	A	B	O
SELECTION AND MATRICULATION:																	
Selective Process.....	O	O	A	A	O	A	B	A	A	A	O	A	A	B	8	2	4
Freshman Week.....	B	O	B	O	O	A	B	B	A	A	O	O	O	B	3	5	6
Psychological Tests.....	B	O	B	B	A	O	A	A	B	A	B	A	A	O	6	5	3
Placement Tests.....	B	O	O	O	A	O	A	B	A	O	O	O	O	O	4	2	8
PERSONAL SERVICE:																	
Faculty Advisers.....	O	O	A	O	O	A	A	A	B	B	B	B	B	B	4	6	4
Other Organized Student Interviews.....	B	O	A	O	B	A	O	O	B	A	B	O	O	O	3	4	7
Health Service.....	B	B	A	O	B	A	B	A	O	B	B	A	O	B	4	7	3
Mental Hygiene Service....	A	B	A	O	B	A	B	B	O	A	A	O	O	O	5	4	5
Vocational Information....	B	O	A	O	O	O	O	B	O	A	A	O	B	O	3	3	8
Employment and Placement	O	B	B	B	O	O	O	B	B	B	A	O	O	B	1	7	6
Discipline.....	A	O	A	B	B	A	B	A	O	B	O	B	O	O	4	5	5
CURRICULUM AND TEACHING:																	
Curriculum.....	O	B	A	B	B	A	B	A	B	O	B	A	B	O	4	7	3
Selection of Instructors....	O	O	B	O	B	B	O	B	O	B	O	O	O	O	0	5	9
Methods of Instruction....	O	O	A	O	B	A	O	A	B	O	B	A	O	O	4	3	7
Objective Tests.....	O	O	B	O	A	O	A	A	O	O	O	O	O	O	3	1	10
RESEARCH:																	
Concerning Teaching.....	O	O	B	O	A	O	A	A	A	B	O	B	O	O	4	3	7
Concerning the Individual..	A	A	B	O	A	O	A	O	A	A	O	A	V	A	8	2	4
COORDINATION:																	
In the College.....	A	O	B	O	B	B	A	A	O	A	O	O	O	O	4	3	7
In Whole Institution.....	A	O	O	O	B	O	B	O	O	A	O	O	O	O	2	2	10
Of Outside Agencies.....	B	O	A	A	A	B	O	B	A	A	O	O	O	B	5	4	5
TOTALS:																	
A ratings.....	5	1	10	2	6	9	7	11	5	11	3	6	2	1	79		
B ratings.....	7	4	8	4	9	3	7	6	7	6	6	3	4	6	80		
O ratings.....	8	15	2	14	14	8	6	3	8	3	11	11	14	13	121		

case than not, and, in such instances, he made no effort to evaluate the relative merits of the different plans. Because of the differences between institutions, a piece of work done in one way in one place was rated A, first because it seemed significant, and second because it fitted into the particular

situation in that institution; and a piece of work at another institution was rated A for identically the same reasons, although the methods were entirely different.

Encouraged by the findings presented in Mr. Hopkins' report, the Executive Committee then presented to Mr. Rockefeller a plan (1) to inform the colleges and universities of the United States concerning the best personnel methods; (2) to prepare a personal record card which should afford personal information to teachers and administrators at the college level; (3) to prepare achievement tests and make available all the facts concerning them in an effort to stimulate such testing; (4) to develop objective and useful measurements of character; (5) to prepare vocational monographs. For these projects Mr. Rockefeller in 1927 granted to the American Council on Education the sum of \$20,000 a year for three years. The Executive Committee then decided to invite the cooperation of scholars in the work of four committees, of which the chairman of each should be a member of the Executive Committee, and to determine policies at a conference of all committees at the Hotel Thayer, West Point, New York, July 1 and 2, 1927.

The American Council on Education invited the following men and women to attend the West Point conference:

Central Committee on Personnel Methods: H. E. HAWKES (Columbia), Chairman; H. W. HOLMES (Harvard); L. B. HOPKINS (Wabash); C. R. MANN (American Council on Education); A. H. RUGGLES (Yale); W. D. SCOTT (Northwestern).

Sub-Committee on Personal Record Cards: L. B. HOPKINS (Wabash), Chairman; MARY H. S. HAYES (New York); J. H. WILLITS (Pennsylvania); J. J. COSS (Columbia); D. T. HOWARD (Northwestern).

Sub-Committee on Achievement Tests: H. E. HAWKES (Columbia), Chairman; AGNES B. LEAHY (Connecticut College); V. A. C. HENMON (Yale); M. R. TRABUE (North Carolina); BEN D. WOOD (Columbia).

Sub-Committee on Rating Scales: D. A. ROBERTSON (American Council on Education), Chairman; GRACE E. MANSON (Michigan); F. F. BRADSHAW (North Carolina); DONALD G. PATTERSON (Minnesota); E. K. STRONG, JR. (Stanford).

Sub-Committee on Vocational Monographs: C. R. MANN (American Council on Education), Chairman; EMMA P. HIRTH (New York); W. W. CHARTERS (Chicago); A. B. CRAWFORD (Yale); C. S. YOAKUM (Michigan).

All of these persons except Miss Leahy and Messrs. Crawford and Charters, who were represented respectively by Miss Margaret Smith, S. S. Board and D. Waples, attended the meeting and enthusiastically participated in the general discussion of policies at the session Friday morning, July 1. At this meeting it was voted to invite all interested groups to a conference next winter. Further discussion developed the opportunities and responsibilities of a central office for quick evaluation of material available; for information concerning personal record forms, achievement tests, rating scales, and vocational monographs; and for stimulating the cooperation of colleges and universities, secondary schools and other organizations concerned in personnel procedure.

The afternoon and evening sessions of Friday were devoted to meetings of the several committees, which reported their findings to the general session Saturday morning.

The Committee on Personal Record Cards undertook to prepare two separate records. The first, a Complete Educational Personnel Record, will contain items of record covering a student's school life from the seventh grade through college. It will contain personal items and extra curriculum and academic records. It will be a check list of items considered useful for immediate service in colleges, high schools, elementary schools, and in research. Each item will be defined; its use will be described; whenever possible a summary of all supporting experimental evidence will be given. The items will be so worded as to indicate their probable usefulness on cards intended for different purposes. The American Council on Education will be glad to receive suggestions concerning items not yet included provided such are accompanied by definitions, descriptions of use and evidence of experimental check upon the use. The committee will also prepare a College Personnel Record. This will involve a list of items and a manual of instructions. The list will contain items selected because of their immediate utility in the care of individual students at the college level. It will contain items from the secondary school

record, the college record (personal, extra curriculum, and academic). As in the case of the first card, each item will be defined, its use will be discussed, and whenever possible a summary of the supporting experimental evidence will be provided. Items which may be included in a card which will be placed in each teacher's hands will be indicated. The list is intended to be the key personnel card of the college distinct from the record kept for admission or for the cumulative record of grades. When the cards have been prepared the American Council on Education will offer them for sale.

The Committee on Achievement Tests recommended that the Central Committee, through its secretary and the central office, make a census of work that is being done in schools and colleges in the preparation and use of objective achievement tests. It recommended also that the Central Committee, through its secretary, attempt to stimulate the intelligent use of placement tests and objective achievement tests in colleges. To this end an annotated list of available tests for use at the college level, with directions and suggestions for their use, will be prepared under the direction of a subcommittee and distributed to institutions proposing to make use of the achievement tests. Furthermore, the committee recommended that this subcommittee be authorized to promote comparability studies on the part of such institutions and commissions as can be interested in the project. Since achievement tests are already available in Modern Foreign Languages, High School Mathematics, American History, English, First and Second Year Latin, Physics and Chemistry, it is proposed to develop, as rapidly as possible, tests in the subjects which are named in the order of their importance for this purpose: Economics, Government, Ancient History, European History, Solid Geometry and Trigonometry, Biology. The committee called attention to the fact that, although a sufficient number of forms and objective achievement tests are available to last for three or four years, any permanent use of such tests is contingent upon the preparation of new forms in practically every subject. Finally, the committee agreed

that, although the preparation of a general high school content examination may be desirable, no recommendation for its preparation would be made at the present time.

The Committee on Personality Measurement reported that after a general discussion in which it appeared that it was too late to offer rating scales in connection with the admission of students to the colleges in 1927 and that the committee was in agreement in its attitude toward existing rating scales and the uses for which they are intended—an attitude which was described as open-minded—it had come to certain conclusions concerning its problem. The committee proposed the name by which it should be known—Committee on Personality Measurement. It declared also that personnel work demands, in addition to ability and aptitude tests, estimates and measurements of personality traits; that it recognized rating scale techniques as provisional, pending development of objective measurements; that meantime sufficient progress in measuring certain personality traits had been made to warrant trial at the present time; that, in view of the small number of valid tests of personality traits, it recognized that rating scales would be necessary for some time to come. The committee suggested certain principles to safeguard and improve rating procedures: (1) Rate only traits observed by the rater. (2) Rate only those traits for which valid objective measurements are not now available. (3) If instructors are to rate large numbers of students, the number of items should not exceed five. (4) Traits should be mutually exclusive. (5) No single trait should include unrelated modes of behavior. The committee undertook to make a rating scale on these principles for use in a cooperative experiment among selected secondary schools and colleges, and to prepare instructions for the guidance of raters and those who desire to write specific case records or "word pictures," recognizing the importance of training raters if valid ratings are to be obtained. For the present it postponed any experiment with self-rating scales. This committee expressed its desire to make quickly available for use in colleges the E. K. Strong, Jr., Vocational

Interest Test; especially it expressed a desire for scales and a scoring manual for Engineering, the Ministry, Law, Medicine, and C. P. A. Finally the committee announced its desire to receive suggestions concerning other tests of personality traits, if sufficiently developed to warrant inclusion in this cooperative program.

The Committee on Vocational Monographs undertook to prepare a statement defining the results a well-written monograph should achieve, the types of information which it should contain, and sources of information and methods of its presentation. The committee being well agreed on the main points, it decided to employ a specialist to collect and analyze as many existing vocational monographs as practicable for the purpose of revising the position of the committee regarding the results to be attained, types of information needed, sources of information and methods of presenting the same. On the basis of this the committee proposed to develop a working model outline before November. It plans then to invite four or five individuals or industrial firms to prepare one vocational monograph each in some occupational field where reliable occupational data are available. These should be completed by March, 1928. These samples the committee decided to distribute among colleges which have appointment offices so that these forms might be tried by students graduating in June, 1928. Reports of the reactions of the students using these experimental monographs will be compiled, and improved outlines and forms will bring about preparation of improved monographs for similar experimental trial in 1929.

In July 210 members of the American Council on Education were invited to send to the office samples of the record forms used by them. Although many colleges were closed during this period, 78 institutions had submitted personal record forms by September 14, 1927. These 78 colleges use approximately 100 forms. Some of these are used by all institutions and contain practically the same information: Admission Certificates, Registration Blanks, Transcripts of Record, Permanent Records. Application for admission

forms and others show that these 78 colleges ask their students 334 different questions. Of course no one institution asks them all. Some questions are asked by each: Name in full, address, place and date of Birth, etc. Others presumably serve a purpose of the particular institution asking the question: What kind of teacher's certificate have you? Religious affiliation or preference? Are you a church member? By whom were you confirmed? Of what organizations is your father a member? What is the racial stock of parents? Of what organizations is your mother a member? Of what political party is your father a member? (It is a state institution which asks this.) What was the education of your parents? What languages other than English are spoken in your home? What is the parents' credit in the community? What is the estimated income of the parents? What are the ages of your parents? What are the ages of your brothers and sisters? What is the educational status of your brothers and sisters? How many books are in the library of your home?

In addition to information about the social and economic background of the family there are, of course, questions intended to elicit something about the individual's financial position: How much money have you available for the current academic year? How was your high school course financed? What is the amount of property you personally own? Have you past due debts? How much? Why? Has a bond ever been refused you? Why? Do you carry life insurance? Have you a bank account? Other investments? How have you contributed to your own support? Are you entirely self-supporting? Are there persons dependent on you for support?

The vocational interests of students are the subject of 41 items: What is your aspiration? When did you begin to consider seriously your vocation? For what occupations are you now fitted? What job have you enjoyed most? What have you been doing since leaving high school? How do you spend your summer vacations? What positions have you held? Why did you leave the last one? What

was the salary? Have you taught school? When? Where? What activities can you direct or coach? Can you cook? Can you type? Can you drive a car? Have you a license? Have you ever constructed or designed toys or machines? Have you ever prepared programs for meetings? Did you ever plan an organization? And of course there are questions addressed to principals and others who are asked questions about the manifested vocational interests of the student.

Other efforts to get at the interests of the student include questions about his extracurriculum activities. What are your favorite amusements? What are your interests and hobbies? To what organizations do you belong? Have you been a boy scout? Were you a Hi-Y member? Musical, athletic, journalistic, dramatic, forensic successes are inquired about. What social events have you attended in the last six months? In what church work are you especially interested? What type of theater do you most enjoy? What favorite periodicals do you regularly read? What is the amount of your voluntary outside reading? What are your three favorite books? In all, some 27 questions of this sort have been asked.

In the effort to understand the student's educational record these colleges ask 43 questions of which some are these: Elementary school record, showing grades skipped? Preparatory school record with dates of attendance, date of graduation, number of classes each week and length of class period, grading system used, grades, number in graduating class, relative rank in graduating class, age at time of graduation from elementary and secondary schools, attendance record, intelligence and other tests in preparatory school? Give the names of all previous schools and colleges attended and dates of attendance. What were the reasons for leaving college previously attended? Degrees received? Honors received? Books and articles published? What are your easiest studies? Which are your most difficult studies? Which are your most interesting studies? Which are the least interesting? Where and how long have you studied

Latin? How have you sought to improve your scholarship since leaving college? What languages do you speak and write? What is the extent of your foreign travel and study? Are you satisfied with your study schedule? Are you satisfied with your instructors?

Of health questions there are 16, of which most are aggregations of numerous items from the forms of health officers. There is no need to indicate the character of the usual health examination record. These are familiar to the officers of all colleges. Items which do not appear on all such forms are these: To what extent do you use tea, coffee, tobacco, alcoholic drink? (One college forbids the use of tea, coffee, tobacco and meat.) What are your eating habits? Have you any speech defects? What does the psychiatrist's examination show? Do you wear high or low heels?

To measure the personality of their students 38 of the 78 colleges resort to rating scales, listing 100 items. This relatively large number of items may be an indication of the importance attached by the colleges to the measurement of character; or it may be an indication of the intangibility of the material sought. The chaotic condition revealed by the exhibit of rating scales would suggest that the latter is the more likely explanation. The 38 institutions seek to rate 118 traits. There is some overlapping. The report affords 640 statistical items for study. The smallest number of traits rated by any college is 5; the greatest is 57. The average is 14. It will be remembered that the Committee on Personality Measurement suggested that raters be not asked to rate more than 5 in case the number to be rated is large. The lowest range of rating is 3; the average seems to be 5; some seem to be of indefinite range. Ratings are sought from one or several of these raters: instructors, principals, friends, business references, employers, ministers, deans, other students, the student himself (self-rating). The number of raters varies from 1 to 15. There seems to be little effort to secure ratings periodically on the same person whether from the same raters or others. Some of the

traits most frequently mentioned are these: intelligence, 23 colleges; leadership, 21; initiative, 19; companionability, 19; cooperation, 19; personality, 17; industry, 17; reliability, 16; perseverance, 16; integrity, 15; alertness, 13; personal appearance, 13; scholarship, 13; originality, 11; self-reliance, 10. Six institutions desire opinions about the student's punctuality. Recently officers of an important industry called for such opinions about employees concerning whose comings and goings they had time-clock records—and this was just what they wished opinions about. Clearly the committee had its reasons for asserting the principle that only those things should be rated for which valid objective measurements are not available. Some of the less frequently mentioned traits are: emotional stability, force, self-control, voice, decision, imagination, rhythm, open-mindedness, humor, thrift, efficiency, loyalty, maturity, ambition, rate of reading, attitude toward property. Obviously the practices of the colleges revealed by the study justifies the caution exhibited by this committee at the West Point conference.

During the summer the Committee on Vocational Monographs analyzed 122 monographs. Many others were examined and rejected as unsuited to the purpose of the committee. This suggested outline for a Vocational Monograph will be considered by the committee at an early meeting:

1. Definition of the work.
2. Type of work.
3. Work relationship with other groups.
4. Origin.
5. Background and development.
6. Organization charts.
7. Typical starting point.
8. Direct and collateral steps of promotion.
9. Opportunity for advancement.
10. Primary duties.
11. Physical or mental characteristics necessary.
12. Physical or mental characteristics handicapping.
13. Detailed study of remuneration.

14. Earnings study of men of same educational level in all work.
15. Proportionate representation of college men at different levels.
16. Previous preparation needed at start and for advancement.
17. Opportunities for obtaining experience.
18. Demand for and supply of applicants.
19. The work as training for other fields.
20. Cost of training.
21. Considerations in choosing a concern.
22. Social and other satisfactions inherent.
23. Social and other sacrifices involved.
24. Bibliography.

The American Council on Education welcomes the cooperation of all its members in this experiment intended to make more effective the service of each institution to its individual students.

DAVID A. ROBERTSON.

Specifications for College Personnel Work¹

IF A PERSONNEL OFFICE is to have a plan, is to continue this plan year after year with success, its immediate requirements are men or women upon whom it can safely build. The selection of these men or women has been very haphazard up to the present time. There are excellent people engaged in personnel work. There are, however, no recognized sources from which replacement can be drawn, nor is there any method possible at the present time by which training for personnel work can be conducted in an adequate manner.

Nevertheless, it is necessary for all offices to make replacements from time to time, and it is, therefore, becoming more and more apparent that there must be some standard specifications on which all offices may safely work. These specifications can be the more easily determined if the average Bureau of Personnel Research is analyzed in terms of functions. In other words, before we set about training or hiring, it is essential that we know exactly the work that is to be done so that we may better determine the qualifications of the persons to do this work. While the work of personnel bureaus varies in different institutions, there are certain

¹ This general outline was submitted to the meeting of the New England College Personnel Officers held in Boston, April 15, 1927, by Harry R. Wellman, Chairman, Bureau of Personnel Research, Dartmouth College. The general outline was approved by this group and a request made that it be published as soon as possible. Since the report was incomplete, Mr. A. B. Crawford, Director of the Bureau of Appointments, Yale University, was asked to submit a statement for the Self-Support Department. This appears as a part of this monograph. It was also considered desirable to have a further report from those institutions which were interested in Personnel in Terms of Placement for Training during the Course. Mr. Paul W. Viets of Massachusetts Agricultural College and Mr. Norman H. Abbott of Boston University were asked to supply this information. This appears as part VI of this report.

fundamental functions performed in all bureaus which can be enumerated and can be translated into the form of job specifications.

Functionally, the work of all personnel bureaus divides itself into the following main groups:

- I. Statistical.
- II. Personnel in terms of the individual and the curriculum.
- III. Personnel in terms of vocational advice and actual placement.
- IV. Personnel in terms of self-support.
- V. Personnel in terms of loans and scholarships.
- VI. Personnel in terms of placement for training in course.
- VII. Personnel in terms of selection of freshmen.

I. STATISTICAL

The work of all bureaus of personnel research must rest firmly on a basis of correct and current records. These records will include different items in different institutions, but primarily they will be concerned with: (1) the actual record of a student's performance in college; (2) a complete record of outside activities; (3) a complete record of his activities in terms of his self-support either in college or during vacations; (4) mental tests including mental placement tests and mental achievement tests; (5) his physical condition when he entered college together with his photograph; and wherever possible (6) a continuous health record. From these records, information is secured helpful to both faculty and student.

The person engaged in handling records should be able to present facts and findings in a clear manner. This involves a reasonable amount of knowledge regarding statistics and the proper presentation of facts in figure and chart form.

The qualifications required for this work are primarily accuracy and interest in the accumulation and compilation of data, the ability to initiate and to conduct new studies from time to time as material accumulates which makes these studies possible. In addition, while it is generally assumed that people who can do this type of work like to do

it, it must be definitely understood that the person engaged in doing this work really likes to do it.

Persons having these characteristics, abilities, and preferences often can be recruited from the graduate departments of colleges and universities. If the work of the department is just starting, part-time services can be secured. Sometimes it is possible to interest a graduate student who will do his thesis work in the department.

Comparing this work with similar work in business, the starting wage should not exceed \$1,800 per annum and the terminal salary should not exceed \$3,500, under any conditions. If the graduate student plan of replacement is followed, the average salary over a period of years ought not to exceed \$2,400.

II. PERSONNEL IN TERMS OF THE INDIVIDUAL AND THE CURRICULUM

Personnel work and service in terms of the individual and the curriculum are handled in various ways. In some institutions the work for all four classes is handled by one individual. In other institutions, the work is broken down by classes and individual councillors assigned to each class. In still other institutions, there are definite organizations such as the Freshman Dean's Office, dealing entirely with the freshman class, and class officers appointed as members of committees on administration who act as liaison officers with all other classes. Very recent developments indicate the desirability of close cooperation between the Freshman Dean's Office and the Bureau of Personnel Research in selecting men who are to be permitted to enter college.

However the organization may be established, it is obvious that the same functions are performed no matter how varied may be the methods of approach. Briefly, the functions are as follows: to orient or to make at home the freshman and to offer him whatever advice he may need regarding his present studies or his immediate future electives; to assist the sophomore in eliminating most of his sophomoreic ideas and in firmly attaching him to his college job, in furnishing

advice regarding his requirements and suggestions regarding his future electives; the Personnel Office must assist the junior in rounding out his college course by giving him advice regarding electives for his senior year, and in discussing with him questions of employment, primarily in terms of his life work, or in listening to any other subject that he wishes to propose. The senior having completed his college work, must be wisely advised regarding his professional or graduate school work and given all the information available, or if he is planning to go into business, he must be given all possible information regarding business and helped to analyze his own capacities in terms of the various business opportunities offered. If a personnel office is concerned with definite vocational advice and offers specific vocational courses beginning earlier in the college career than senior year, specific vocational advice must be added to the task of each of the above groups.

While it is realized that in a number of institutions this advice and assistance must necessarily be given by one person, the job detail and the job specifications can be better secured if it is assumed that assistants can be selected for each group. For this reason alone, the job specifications are worked out in terms of freshman, sophomore, junior and senior year, with the definite understanding that if vocational advice is given before senior year, vocational specifications must also be included.

1. The freshman officer must of necessity have the ability to make the freshman feel entirely at ease and rather appreciative of the opportunity afforded by the interview. The freshman interviewer must have complete knowledge of the curriculum and its requirements for various majors requiring pre-work for election in sophomore and junior year. Such qualifications enable the officer to assist the freshman in so electing his early work as to be able to have a variety of majors available rather than to limit himself to one specific major thus early in his college course.

It has been found possible to secure such a man on a part-time arrangement from the faculty. If a man is selected in

this way, it is very helpful to find a candidate who has had certain contact with the administrative problems of the college and who knows rather definitely the reason for the requirements as established in the catalog. Such a man can usually be released for part-time work.

If it is necessary to train such an individual, a year's work in the office of the registrar or the dean in an assistant capacity will provide the required knowledge regarding the curriculum. This required knowledge should, of course, be supplemented by a pleasing personality and a very real interest in being helpful to young men entering upon their college course.

Comparing this work with similar work in business, the starting wage should not exceed the first salary of an instructor. This will range from \$1,200 to \$1,800. Since this work offers unlimited opportunity to learn the whole method, technique, and system of a personnel office, and the administrative work of the college, it may fairly be considered as a stepping-stone for positions paying as high as \$7,500 per annum.

2. The sophomore interviewer or officer must have thorough knowledge of the curriculum requirements, but, more than that, he must be a person having an ability to reach the sophomore with worthwhile advice. Sophomore year is difficult at best. Things that men do in this year should not be held against them. An officer having the point of view that sophomore year is terrible and must be corrected, whether or no, will usually be of very little service to the personnel office. On the other hand, a sophomore officer being reasonably youthful, being very much in sympathy with the sophomore's point of view, having himself only recently passed through this period, is and can be of extreme value. Therefore, the sophomore interviewer can often be recruited directly from the senior class provided he is willing to sacrifice part of his summer in the office of the dean or registrar to familiarize himself with the requirements of the curriculum, and the balance of the summer in the personnel office studying its method and technique. On a

part-time basis such a man can usually be secured for not over \$600 per annum. If the interviewer has to be secured outside of the senior class, he should go through the same training as the freshman officer and receive the same amount of money and have the same opportunity for advancement. One point that should be particularly stressed, however, is the fact that this interviewer of all interviewers should be young, alive, enthusiastic, sympathetic and yet firmly helpful to a class that needs more help than any other class in college. If vocational advice is given during this year, specific vocational training should, of course, be added to the above specifications.

3. Since the junior has generally completed his curricula requirements the junior officer finds that most of the problems presented by the junior to the personnel office concern professions or life work, questions of sex, religion, and other more or less general topics. It is impossible to write job specifications for such an individual. There are, however, certain factors that have proved useful. The most important is that the junior officer be old enough to secure the respect of the junior and that his experience be wide enough to be of real assistance in offering advice. This breadth of experience can oftentimes be found in certain members of the faculty who are willing to give up the necessary time for this purpose. The junior period does not require as much time for interviewing nor as much specific and definite information regarding curriculum and other details of college. It requires a broad, pleasant outlook on life and a stimulating, magnetic personality backed up by some years of practical experience.

Obviously, it is not easy to find such a man. If it were necessary to train a man for this purpose, the best training would be one year or one semester in executive and administrative offices of the college and five or ten years in practical business outside the college. This man may also be secured from graduate schools because some graduate students find that their interest is still in men and in colleges more than in the profession for which they have been preparing. Men

come frequently from divinity schools and occasionally from schools of business administration. If recruited from this group, the starting wage should not exceed \$1,800. As their work develops, however, they are immediately in line for promotion in their own office and available for directors in other offices. Therefore, while the starting wage is necessarily low, the opportunity for advancement is extremely bright with the added pay that the added opportunity would naturally provide.

4. In discussing work done by a senior officer in personnel, it is necessary to keep clearly in mind that the specific functions done by this officer will depend entirely upon the method of organization. This specification is written on the theory that the senior officer keeps the same relative position in the Personnel Bureau as do the officers of the other classes. If the officer handling the seniors is in charge of the general work of the Personnel Bureau, however, the paragraph headed "5," which is a job specification of the director of any Personnel Bureau, should be considered. The present discussion will, therefore, limit itself entirely to the senior officer, not a director of the bureau or an executive officer of the administration of personnel.

The senior adviser will find 75 per cent of his advice dealing definitely with professional and vocational questions. The balance of his advice will be concerning immediate financial difficulties, suggested electives for second semester, and perhaps questions as to outside readings and other interests that the senior should undertake, to round out his college course.

Seventy-five per cent of his equipment, therefore, should consist of a thorough knowledge of the professions and of business. Generally speaking, it is possible in each college to round up a group of lawyers, doctors, ministers, etc., who will act as auxiliary advisers to the students interested in these professions. In addition to this outside advice, this officer must have access to complete information regarding all graduate schools, regarding their requirements and scholarships. Many a man has given up further study

because he was not informed of available scholarships. This material can be accumulated by securing catalogs from all colleges and universities having graduate schools and by personal correspondence with the various deans and registrars.

Information regarding business, however, is more difficult to secure. Broadly speaking, if this senior interviewer had been in a general manufacturing business for four or five years, he would have the basic required information covering nearly all business. If he has not, he must rely upon business or upon the representatives business sends to the college for clear and accurate descriptions of the jobs that are offered. At the moment, business is being asked to prepare monographs and job specifications which will be of material assistance to a man charged with this particular part of personnel work.

Since the senior has very definite standards by which he measures people, it is imperative that the man handling this work be able to command the senior's entire respect. Therefore, under the present circumstances and until vocational information is available in the terms of monographs and job specifications, it is imperative that this man have either business experience or business contacts by which he may secure the needed material upon which he can offer advice to the senior. Again, while it probably should not be so, the man in this work who has returned from business rates very much higher in the minds of the men on campus than the man who is the product of the campus and nothing else. Whenever it is possible, therefore, it is well to recruit such a man from the five or ten-year graduate classes, a man who has become tired of business or who has been so successful in business that he may return to do this work largely on the grounds of service to mankind.

If the candidate is recruited from a senior class in college, he should be farmed out to business for one year and should be given a traveling schedule to cover various types of business, extending throughout the following summer. He will then return in the fall with complete information on present

opportunities which will undoubtedly tide him over until he secures a background of experience that would permit him to be useful at all times in offering placement advice.

A senior qualifying for this position would have to receive at least \$1,800 as a starting wage. Probably arrangements can be made so that the business in which he is placed will take care of his salary while he is in business. When he leaves his position and starts on his traveling schedule of investigation, his expenses will have to be met, which will make his total cost in the vicinity of \$3,000. Since the experience of this particular job makes a man available for a higher executive position in college work and makes him equally available for an excellent job in the personnel departments of business, the position should be considered as very valuable training regardless of the salary. It is impossible to set any definite figure for business maturity, but if comparative schedules were used, this man should be earning \$3,500 at the end of his fifth year and would be eligible for an appointment at from \$5,000 to \$7,500 as opportunity presented beyond the five-year period.

5. Depending, of course, upon the type of work done in every institution, the man in charge of personnel work must have certain fundamental qualifications that ought to be stated and ought definitely to be borne in mind by all executives employing personnel officers and by all personnel officers employing assistants.

First of all, it is not enough that a man be a scientific analyst. He must have an appreciation of the value of records and the necessity of a scientific approach to the entire problem of personnel. At the same time, however, he must have a real liking for people and a real desire to be of use in assisting young men to find interests and work in which they will have the most employment and from which they will reap the greatest amount of pleasure and profit.

Such a man will have a personality that will attract men to his office. He will be sympathetic without being silly; he will be stern without being unjust, and he will first, last, and all the time, be a student learning, rather than a person

who knows and is satisfied that his wisdom is ample for the job in hand.

Mr. Henry B. Thayer, chairman of the Board of Directors of the American Telephone and Telegraph Company, speaking to the graduating classes of the Graduate Schools at Dartmouth College, said: "The real purpose of the liberal college should be to give its graduates in any pursuits, ideals and a greater capacity for intellectual enjoyment." If one accepts Mr. Thayer's definition, it at once becomes evident that a personnel officer must have complete knowledge of the college he represents, its ideals, its purposes, its curriculum, and the men who are units in carrying out its general plans and ideals.

If, in offering advice to students, the personnel officer finds himself obliged to give advice regarding electives, he must know and conform to the hour, point, and subject requirements as established by the faculty; he should never suggest an exception without first consulting the proper authorities or the head of the department involved. *Inaccurate advice, comforting to the student and tending to make the personnel officer popular, antagonizes the administration, invites the hostility of the faculty, and entirely emasculates the work of the Personnel Bureau.*

In this connection, the personnel officer would do well to see to it that the faculty and administrative officers of the college are always informed of the work being done by the bureau; cooperation must be sought and must be offered; the personnel officer must accept the responsibility of selling the value of his work to the faculty and administration—and he must keep on selling it.

Nearly every major department in a college or university, has some personnel research problem. The Personnel Office, having complete student records available, should offer its services to all departments. One or two major research problems should be undertaken yearly. The required personnel to carry on work of this type can usually be recruited from graduate students in the departments interested. The personnel officer should be able intelligently to lay out and

supervise such work, thus materially assisting the various departments.

The personnel officer must insist upon strict accuracy in all office routine dealing with records; he must so organize his sources of information and his method of correction or of additions that his record cards will be complete at all times. In large offices this necessitates an assistant who is accurate and painstaking in handling detail.

Important information indicating trends, changes, or malfunctioning courses, departments, or groups of individuals can best be shown by charts. The personnel officer should know the best methods of charting and should see to it that all charts are kept current and are significant of something worthwhile. In large offices the assistant in charge of records and card detail should be competent to do the actual work of compiling and charting.

Thus, in addition to being genuinely interested in people and possessing an ability to make this interest effective in handling the problems of student and faculty, the personnel officer must have an appreciation of operating only upon known facts and the patience to secure and keep these facts with precision and accuracy. Since only about one man in a thousand would have the combined abilities of complete human interest and machine-like precision, it is obvious that as the work of personnel bureaus expands, men will be chosen for assistants who have abilities that supplement the abilities of the personnel officer.

If a director of personnel is concerned with direct placement work, there are certain technical things which he must have if he is to be effective. Too many men attempt to do this job on the theory that any older man knows enough to advise any younger man. This theory is not substantiated by fact in any particular. The rule of thumb method, guesswork, and worse still, the desire to "do good," ought to be abandoned and ought to be suppressed in every personnel office.

The placement officer must know with precision the requirements of the places that are to be filled. In other

words, he must know exactly what the positions are and what is required of the person who fills those jobs. This requires personal contact with business and a thorough knowledge of the different details performed in the different departments of business.

The personnel officer must possess complete and accurate knowledge of the professional schools, understand their requirements and have knowledge of opportunities for graduate work.

The personnel officer must secure an accurate inventory of the qualifications of the man to be placed. This inventory can be secured from records and by personal interview.

To do both of these things well, the personnel officer will find himself compelled to establish a simple but adequate system of records. If, as time goes on, these records can be standardized for all institutions, the science will develop much faster.

Since the director will occupy a position equal in importance to any of the college deans, the salary should be equal to the existing pay for executive work of this type. The salary will range from \$3,500 to \$7,500. Generally speaking, it is undesirable that the occupant of this position should receive any more than the maximum salary paid to those engaged in strictly college or professional work.

III

PERSONNEL IN TERMS OF VOCATIONAL ADVICE AND ACTUAL PLACEMENT

If any personnel bureau feels itself inadequately equipped to offer placement advice and if it is in a position to train its men for this service, the training may be secured as follows: When a graduate has been secured for general personnel work with the classes, he can usually be placed with large corporations for the summer, who will cooperate to the extent of giving him thorough training and pay him the current rate of wages. (This service has already been offered by R. H. Macy and Company and by the American Telephone and Telegraph Company.) If this general plan is carried

out for succeeding summers, four summers should be adequate in preparing the candidate to give reasonable placement advice in terms of general business and a few of the more specialized lines of business activity. If the expense had to be encountered, the average payment for work of this type should not exceed \$25 per week. In the second or third summer, however, traveling expenses should be added which would make the normal cost per week from \$55 to \$65.

IV

PERSONNEL IN TERMS OF SELF-SUPPORT

Since the problems handled by the Self-Support Department often require the cooperation of other departments of the university, training in any university office would be extremely helpful. Possibly a month's work in the Dean's Office and Board of Admissions Office would give a good background. At Yale the prospective assistant in his senior year works on a part-time basis in the Bureau of Appointments itself, thereby growing gradually into the work he is to assume on a full-time basis after graduation. It is often difficult for a senior to change his point of view from that of an undergraduate to that of an administrative officer of the university. A decided adjustment is necessary in this type of work just as much as any other position he might tackle after his college course. A mature man of high ideals and good judgment should be chosen. He should be cordial in meeting the students, a sympathetic listener, and one who inspires confidence, but steady enough not to be unduly moved by hard luck stories. He should be careful not to cater to his friends who are still in college and besiege him for "good jobs." He should be open-minded, ready to take suggestions and lend a hand on all the problems connected, with self-support, both in the office and in the field and above all, be easily accessible to the students seeking his advice and encouragement.

During his senior year, while working on a half-time basis, it is possible for him to make many contacts in the business world, so that when he starts on his regular job he can more easily and quickly find actual openings for students.

Any young graduate undertaking work of such responsibility, affecting so large a body of students, should be carefully supervised, especially at the start. Too much authority is apt to give a false sense of importance. Staff meetings throughout the year would have distinct advantages. At these meetings questions of policy and certain outstanding cases could be discussed. They should tend to bind the force of workers in the Self-Support Department into a unified whole, working systematically toward the same end. During part-time service, the salary will not exceed \$600. When placed on a regular graduate basis, the salary should parallel an instructor's salary and the maximum would have to be determined in each case by the relative importance of placement work in the plans of the bureau.

Since this function is not now performed by any considerable number of personnel officers or since it is performed as a part-time function of the work of the director, it is not necessary to establish a scale for salaries and advancement.

V

PERSONNEL IN TERMS OF LOANS AND SCHOLARSHIPS

Loans and scholarships are, at present, almost universally handled by the deans of our colleges and universities. With the introduction of bureaus of personnel research has come a tendency to include an officer of the new bureaus on the committees established by the deans to handle these matters. In some of our institutions the entire charge of the administration of loans and scholarships has been transferred to the bureau of personnel research. If a bureau of personnel research has been in operation for a sufficient time to accumulate worth-while student records, and if the bureau has won the confidence of the faculty and administration, it should administer all loan and scholarship funds, since it possesses more adequate information regarding the student and his needs than does any other organized department of the college or university. Until such information is secured and until the bureau does enjoy the confidence alike of administration, faculty and students, it is entirely unwise for the bureau to take any part whatsoever in administering

these funds. If the bureau does assume this task, it must be handled by the executive officer only.

VI

PERSONNEL IN TERMS OF PLACEMENT FOR TRAINING IN COURSE

Some institutions require, as a part of the course, placement of their students for training in the vocational occupations for which they are preparing in college. The students receive credit for this work. Some institutions require this training at the end of the college course, while others designate a period before resident work is completed. The length of time for this training period varies in the different institutions from three months to one year.

Where there is a personnel department, the work of the supervisor or the director of the vocational placement should fall directly under the control of this division. The officer in charge of this work must necessarily have a thorough knowledge of the qualifications of men required by the business or industry with which they are placed. He must also be able to give complete information about the occupation and the training opportunities available. In addition to general information, each training opportunity should be separately analyzed and a complete file maintained regarding the detailed requirements of each job, including descriptive material such as photographs, available living conditions, wage scale, and other information which varies with the individual organization.

Much of the work of this officer will be in the field, following up each individual case, making necessary adjustments and assisting the student with problems which arise. If this work is properly done, where a fairly long period of training is a practice, one hundred students are all that one man should handle, unless assistants are provided.

This work requires a man who is capable of making satisfactory contacts on the outside and keeping in close touch with the activities of the business organizations with which the students should be placed. He must be capable and able to hold the confidence of the employers as well as the students. Ability to analyze without bias the intricate

situations which arise in this work is a necessary qualification.

The man with these qualifications could best be secured from business or industry. He should have had some executive experience, preferably in personnel work. If such a man is not available, one might be secured from the college staff to take training in various business organizations for short periods.

The salary of the officer filling this position should range from that of an assistant professor to that of a full professor, according to the classification of salaries for this rating in the institution with which he is connected.

VII

PERSONNEL IN TERMS OF SELECTION OF FRESHMEN

During recent years the number of men and women desiring to enter college has greatly exceeded the accommodations of the various institutions. Owing to this fact, many colleges have adopted a selective process which attempts to select students not only on the basis of their grades but also on the basis of their personal qualifications and characteristics. This work is usually confined to a committee cooperating with the freshman dean or under the direction of other officer of the administration. In some colleges, the Director of the Bureau of Personnel Research is a member of this committee. In other colleges, the Bureau of Personnel Research is not represented. As bureaus of personnel research develop to become worth-while departments of the college, it is fair to assume that their function will be recognized as valuable and that they will be represented on all committees of this type. If, as is now anticipated, the bureaus do further work in placement and achievement tests and preparing standard record blanks useful to all preparatory schools, undoubtedly the bureaus will prove themselves to be of worth-while assistance to the committees on Selection of Freshmen and will themselves secure representation. Until this is an accomplished fact, however, it seems undesirable for any college Bureau of Personnel Research to extend itself into the pre-college field.

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Job Specifications

AMERICAN COUNCIL ON EDUCATION

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INTRODUCTION

Expenditures for public education in the United States are rapidly increasing. They have more than doubled since 1920. Though Americans have profound faith in schools as the wisest possible investment for self-governing people, they are restless under the increasing burden of taxation. Therefore they are beginning to demand justifications of costs in terms of tangible results. And since many of the results of education are intangible, an ominous tendency to cut costs of education any way is appearing. Industry has achieved low production costs of fine goods by scientific study and elimination of wastes. Pressure is being brought on schools to do likewise.

Schools are making notable progress both in application of scientific methods to education and in elimination of wastes. But educational profits cannot be displayed objectively on a balance sheet at the end of each fiscal year. Meanwhile costs continue to rise and taxpayers are getting impatient. Already a number of school budgets have been ordered reduced by governors or school boards without regard to educational consequences. Other similar budget cuts are in prospect unless a better mutual understanding can be reached by business and education with regard to schools.

One very obvious way of reaching such a mutual understanding is to make schools deliver goods the public needs at a price the public is willing to pay. During the war many schools did this for the army. The procedure was very simple. The army had a vital and very definite mission. Specific objective results had to be accomplished in record time. The army studied its mission and wrote job specifications listing the things each type of skilled worker does in a military unit. The schools analysed each such job specification into a progressive series of school exercises that would develop the required skills quickly in properly selected soldiers. Notable results were secured. Competent telegraph operators were developed in five months, though ten months had previously been required. Inexperienced

men became journeymen carpenters or blacksmiths in a much less time than had been considered possible. Reports on this intensive technical training that was developed in the crisis by cooperative effort of the War Department and the schools were published, in 1919, by the War Department in two monographs entitled respectively "The Committee on Educational and Special Training" and "The National Army Training Detachments."

Besides this new form of intensive technical training, the Army developed two other agencies that were indispensable to better appraisal of individual abilities and better placement of the right man in the right job. The first of these was the Division of Psychology of the Surgeon General's office. This Division produced the well-known Army Alpha test that was given to more than two million soldiers, thereby demonstrating the enormous range of individual differences among young men with regard to "mental alertness" or whatever the test measured. The results also indicated a probable relationship between test score and type of work suited to each individual.

The second of these agencies was the Committee on Classification of Personnel. This committee developed qualification cards, trade specifications, trade tests, performance tests, and personnel specifications as practical tools designed to facilitate the process of discovering talent and assigning it where most needed. Complete reports of the work of both of these agencies have been published.

These three agencies were established independently, each in response to a specific recognized need for improvement in the mobilization machinery. Their efforts were at first uncoordinated. But it soon became evident that their functions are interdependent. They are correlative elements of a personnel system. But though this fact was recognized before the war ended, the three had not been united when the armistice was signed.

The men assigned to these agencies were mostly civilian psychologists, educators, or employment managers who were temporarily in the military service. When the war ended they quickly returned to their civilian occupations, each

carrying with him basic elements of a sound personnel system but no one having a well-coordinated whole. As a result we emerged from the war with a series of uncoordinated portions of a personnel system which, if coordinated in a single coherent procedure, would be of fundamental value for all agencies involved in handling and organizing men.

Realizing that significant new personnel methods had been developed in the army during the war, the War Department immediately began to work over the war reports and to develop a coherent system for future use. It soon became evident that job specifications are fundamental to all phases of personnel work. Therefore, one of the first things done was to develop a series of job specifications and a standard terminology for the various types of technicians required in the Army. This was completed in 1923 and published as Document 1121 of the Adjutant General's Office under the title "Minimum Specifications and Index for Occupational Specialists." The army also made extensive experiments, based on the analysis of job specifications and designed to perfect the new techniques of training and of selecting and placing men. An account of this work was published as Supplement No. 1 of the EDUCATIONAL RECORD, April, 1926, under the title "Education in the Army." Twenty-eight manuals of instruction with appropriate standardized tests were developed by the job analysis method and were published for use in the service.

While this work of salvaging war experience in the personnel field was progressing in the Army, a number of the psychologists, educators and employment managers who had participated in the war work began to cast about to find some way in which their war experiences could be turned to account in civilian business and education. As a first step toward concerted action in this direction, the American Council on Education called an informal conference to consider the problem early in 1922. This group formulated a program for a national conference on the subject and recommended that the President of the United States be requested to issue the call for such a conference.

The request was made, but since it did not seem wise for the President to call such a national conference at that time, the proposal was presented to the Secretary of War and resulted in the Conference on Training for Citizenship and National Defense called by him in November, 1922. A special report of this conference was published by the War Department early in 1923.

Job specifications and occupational terminology were important topics in that conference. It again became clear, first, that job specifications that state precisely what must be done on each job are essential to development of tests for selection and the organization of effective training programs; and, second, that the first step toward standard terminology is comparable specifications. This requires that all concerned write their specifications in approximately the same form. Therefore, the War Department invited the American Telephone and Telegraph Company to cooperate in the development of a typical form that would meet as far as practicable all the requirements of industry, of education, and of mobilization. After two years of study and experiment, in which the American Council on Education cooperated as the representative of the schools, the tentative form presented in this monograph was developed. The War Department has approved this as satisfactory for its purpose. The Telephone Company is trying out the practical application of job-specifications to the telephone industry and has consented to the publication of these preliminary and tentative samples of job specifications as a basis for cooperative experiments among a wide variety of occupations and directed both toward further improvement of form and toward evolution of standard terminology.

In studying the job specifications presented in the following pages, careful distinction must be made between form and content. All are written in the same form. This form has been found to meet adequately all the requirements. It will unquestionably be improved by further use. But the content of any one of these specifications does not correctly describe the work done under the corresponding title in all companies. If all who are writing job specifica-

tions will write them in a form like that here presented, they will not only secure satisfactory results for their own purposes, but they will help assemble the basic data needed for a comparative study of content looking toward clarification of occupational terminology and more vital work in schools.

The project initiated by the American Council on Education in 1922 for salvaging war experiences has now been developed by it into a clearly defined cooperative experiment between business and education. The purpose is to evolve a coherent personnel procedure that helps men and women find the work they can do best. Job specifications of the type here presented are important instruments in making the experiment. By their use business, industry and the professions can depict the world's work in a manner that helps themselves and also makes it possible for schools to do a better job. The other half of the experiment consists in developing record cards, tests of achievement and other similar instruments by which schools may help themselves and also depict the achievements and tastes of students in a manner that will guide them to appropriate life occupations. Industries profit from this work by reduced costs of breaking in and of turnover. This second half of the experiment is also under way; but that is another story.

The Chamber of Commerce of the United States is co-operating with the Council in this experiment. The Committee on Education of the Chamber has adopted the plan of working with local Chambers in a few communities to make local business firms and local schools mutually more helpful by the process of exchange of reliable information as just described. When the details of operation have been worked out in a few cases, other communities will be encouraged to similar action.

In addition to practical values in administration, the writing of job specifications may have large educational value in industry. For the various jobs in any plant are defined and assigned by management. Often workers do not understand the full scope of their work and of its relation to the whole enterprise. The experience of writing for

himself a description of his own job in the form of a job specification is then very useful to the worker. To do this, he must study his job and clarify his objectives. He begins to think consecutively about the things he daily does, sees, and handles and this stimulates interest in work and personal growth. Such descriptions of work written by employees are reviewed by management. This process of collecting the essential details required is also much more satisfactory and less costly than the process of having one man write all the specifications for a group.

The application of job specifications to education has not yet been developed as fully as has their application to industrial organization and management. Their application and value to technical training in industry are obvious and immediate. The job specification tells what the skilled worker does and instruction is then organized to train apprentices to do the things specified. Such training is, however, highly specialized, and it is universally agreed that too early specialization is fatal to wise vocational choice and to maximum liberation of the latent powers of children. Methods of dealing with job specifications for purposes of general education are discussed in the last section of this monograph.

The cooperative experiments just described furnish one real avenue of approach to a better mutual understanding between business and education. If industry, business, and the professions will supply properly written job specifications for all phases of the world's work, and if the schools will conscientiously try to use such specifications wisely in developing citizens who know how to take hold in life, tangible results of schooling will soon appear. And when parents see their children really growing in mastery and employers find that young people fresh from school know how to take hold of the world's work, all question of costs of education will vanish. Americans know good goods when they see them and are willing to pay the necessary costs of producing them.

In 1918 the Joint Committee on Engineering Education finished its report. This was published as Bulletin 11 of the Carnegie Foundation for the Advancement of Teaching

under the title, A Study of Engineering Education. That report contains a paradox. It states that over 7,000 professional engineers voted by 95% majority that personal character has greater weight in determining engineering success than does mastery of the science and technique of engineering. That professional judgment has been widely acclaimed as sound. But since schools devote practically all their time to instruction in science and technique, it was not then apparent how this professional judgment helps schools do a better job.

Nine years have passed. The experiences of these years are showing ever more clearly that the procedures herein presented offer one practical method of resolving that paradox. For when training programs are intelligently organized on the basis of job specifications and their intelligent analysis, they foster the growth of sound morality while developing technical proficiency. Those who doubt this statement are invited to put it to the acid test of experiment. Young America is demoralized by the current system of time service for credits. Challenge them with real missions. Place responsibility for achievement on them. Then watch them grow strong and upright through the discipline that comes from overcoming the difficulties inherent in all worthwhile work.

Job Specifications

JOB specifications were first used in industry as aids to management in selecting employees, in determining relative proficiency and in standardizing terminology. Gradually their broader uses in personnel work and in educational procedure are becoming apparent. As the scope of their usefulness expands the form in which they are written changes. At present the form that seems best adapted to the requirements of industry, of terminology and of education is the one illustrated in the first sample below describing the elementary job of a cable splicer's helper in the telephone industry.

It will be noted that the specification proper is preceded by a brief statement defining the general nature and location of the work. This is convenient for classification purposes and for constructing occupational codes.

The statements describing the work itself are called "Objectives." This places the job before the worker as a challenge to achievement. Each item in the specification describes a specific task requiring action. The result to be accomplished is so obvious that the worker can soon tell for himself whether he is doing the specified acts well or ill. No reference is made to personal or emotional traits. Experience has shown that mention of these confuses the specification. If a man does a job well, he has the necessary technical qualifications. Personal peculiarities may disqualify him for working harmoniously in a particular group, but this question should be treated as a distinct problem. Hence personal traits are out of place in job specifications.

SPLICERS' HELPER

Does the simpler forms of work necessary on cable splicing jobs.
Located in city area—construction force.

Objectives

Apply, when necessary, any knowledge or experience gained prior to entrance as a new employee.

Develop proficiency in work of each of the following grades as a requirement for advancement to each succeeding grade.

Grade D

- Keep immediate locality of work clean and orderly.
- Do any simple work which splicer may order.
- Test and climb telephone poles.
- Place splicer's platform and erect wind shield in aerial position.
- Remove and replace manhole covers.
- Test manholes for gas.
- Clear manhole of water with hand pump.
- Set up and maintain the safety devices prescribed for cable work.
- Give warning signals to highway traffic at open manholes.
- Anticipate need for tools and materials and pass them to splicer when needed.
- Care for splicer's tools, materials and cart.
- Load and unload reels.
- Render prescribed first aid treatment in emergencies.
- Follow accident prevention practices approved for splicing work.
- Comply with Company regulations as to hours, conduct, etc.

The splicers' helper, Grade D, is the least skilled man in that work. He is, however, in line for promotion if he grows. Therefore, the job specification for splicers' helper continues:

Grade C

- Perform Grade D work when necessary.
- Hook up and adjust tone set for use.
- Apply tone in making tests for count and insulation of pairs.
- Prepare hot paraffin and molten solder for use.
- Boil, cut and punch cotton tubing.
- Cut, shape, clean and split a lead sleeve.
- Seal cable ducts at entrance to manhole.
- Cap and pack iron pipe ducts.
- Stamp cable tags and place on cables.
- Clean and stencil cable terminals.
- Mount pole steps.

Grade B

- Perform Grade C work when necessary.
- Test and replace protector carbons and heat coils.
- Ride aerial messenger and work in suspended position.
- Strip and remove lead sheath from cables up to 200 pair without injury to core.
- Boil conductors in paraffin.

Grade A

- Perform Grade B work when necessary.
- Separate wires and make insulation tests.

Test wires for count of pairs.

Board wires.

Lap and mark corresponding wires from each cable end.

Slip sleeves on and skin insulation of each wire preparatory to twist.

Make twisted, wrapped and soldered or soldered sleeve joints in wires.

Wrap entire bulk of spliced wires with muslin tape.

Study and practice on the training subjects recommended for this assignment, as an aid to self-improvement.

Develop proficiency in all grades of this work as a requirement for advancement to Third Class Splicer.

This process of classifying jobs in a series of increasing difficulty but in a given line of work may for convenience be called *pyramiding*. Such a pyramid of job specifications points out to the worker a direct line of advance. It indicates to him where he must improve if he is to win promotion. Hence, it stimulates ambitious men to self-improvement and shows them specifically how to go about it.

In addition to the line of progress indicated by the objectives of the job, many specifications end with the item "Study and practice on the training subjects recommended for this assignment as an aid to self improvement." The company supplies this material to those who ask for it. This supplies an effective criterion by which men sort themselves for promotion and growth.

In the telephone work the splicer group is a long one. But it is so admirable an example of pyramiding that it is here used as an illustration.

THIRD CLASS SPLICER

Does straight or single tap splicing of local cables and makes wire forms.

Located in city area—construction force.

Objectives

Perform, when necessary, any form of work done while a Splicers' Helper.

Develop proficiency in work of each of the following grades as a requirement for advancement to each succeeding grade.

Grade B

Direct and coach a Splicers' Helper in his work.

Bend cables to point of splice without kink or injury.

Slip lead sleeve, beat in ends, pour lead and wipe a straight or "Y" joint on the smaller cables.

Dress cables after completion of splice.
Wipe bonding ribbon or ground wire to cable sheath.
Pour hot compound in making pot heads or insulation splices.
Hang completed cable splice and projecting cable in place.
Place wire ties, hang messenger rings and mount cable clamps.
Make and place a drip flange on a cable terminal.
Mount the smaller cable terminals on walls, poles, etc.
Form and stitch the smaller sizes of cables preparatory to terminating them.
Connect or solder the smaller cables to protectors or terminals.
Make out time and material reports for self and helper.
Inspect new work and repair defects before leaving job.
Protect unfinished splice overnight.

Grade A

Perform Grade B work when necessary.
Make a complete straight or single tap splice on any size of local cable, aerial or underground.
Arrange cable racks and hangers in manhole walls.
Mount the larger cable terminals in all locations.
Form and stitch the larger sizes of cables preparatory to terminating them.
Connect or solder the larger cables to protectors or terminals.
Mount, shellac and tape forms at distributing frames.
Clear all cable and terminal troubles in aerial, block or house, locations with minimum interference to service.
Clear manholes of water with motor pump.
Study and practice on the training subjects recommended for this assignment, as an aid to self improvement.
Develop proficiency in all grades of this work as a requirement for advancement to one of the following:
 Second Class Splicer.
 Junior Cable Testman.

SECOND CLASS SPICER

Does multiple splicing of, makes transfers in, and clears all forms of trouble on local cables.

Located in city area—construction force,

Objectives

Perform, when necessary, any form of work done while a Third Class Splicer.
Develop proficiency in work of each of the following grades as a requirement for advancement to each succeeding grade.

Grade B

Make a complete multiple splice on the smaller sizes of cables.
Establish talking wires and spare pairs in cables.

- Do all wire, lead and testing work required to make a simple transfer in the smaller cables.
- Place or remove cable incident to a transfer or sectional throw.
- Make air test on a finished splice, with aid of air pump.
- Clear sheath and terminal troubles on underground cables.
- Locate and clear protector troubles.
- Run cross connections.

Grade A

- Perform Grade B work when necessary.
- Read and follow a schematic drawing of a cable lay-out.
- Make any kind of multiple splice on small or large cables.
- Make simple transfer splices on the larger sizes of cables.
- Clear all external and internal troubles in any local cable aerial or underground.
- Operate a Wheatstone Bridge and aid Cable Testman in making capacity unbalance tests.
- Detect location of cable trouble with wireless test set.
- Make insulating joints in cable or strand.
- Study and practice on the training subjects recommended for this assignment, as an aid to self-improvement.
- Develop proficiency in all grades of this work as a requirement for advancement to First Class Splicer.

FIRST CLASS SPLICER

Does splicing of toll and composite cables and conducts sectional throws of local cables.

Located in city area—construction force.

Objectives

- Perform, when necessary, any form of work done while a Second Class Splicer.
- Develop proficiency in work of each of the following grades as a requirement for advancement to each succeeding grade.

Grade B

- Interpret any cable plan without supervision.
- Make a complex transfer under exacting service or working conditions.
- Make a complete cable throw splice of any size on local cables.
- Make a complete splice on a quadded non-composite toll cable.
- Detect and clear trouble on non-composite toll cables.

Grade A

- Perform Grade B work when necessary.
- Direct the work of another splicer in making the distant splice of a cable throw on local cables.
- Lay out route of cables and location of splices in manholes.
- Do any splicing job required in cutting over a new central office.
- Maintain and repair manhole lighting sets.

- Make complete splices on composite toll cables of all kinds.
- Locate and clear trouble in composite toll cables.
- Study and practice on the training subjects recommended for this assignment, as an aid to self-improvement.
- Develop proficiency in all grades of this work as a requirement for advancement to Senior Splicer.

It will be noted that a worker may advance up to the grade of Splicer, First Class, on account of progressive growth in technical skill alone. The next following grades, Senior Splicers, require, in addition to technical skill, some supervision over the work of others and some responsibility for planning.

SENIOR SPLICER

- Does splicing of submarine cables and engages in the more complex and difficult splicing work on local and toll cables.
- Located in city area—construction force.

Objectives

- Perform, when necessary, any form of work done while a First Class Splicer.
- Develop proficiency in work of each of the following grades as a requirement for advancement to each succeeding grade.

Grade E

- Proceed with splicing work on any local or toll cable without direct instructions.
- Splice wires, armor and reinforcement of a submarine cable.
- Terminate submarine cable at sealed chamber terminal.
- Clear trouble in submarine cables.
- Install ground leads, pipes and buried plates.

Grade D

- Perform Grade E work when necessary.
- Determine proper location of insulating joints.
- Decide on proper run for ground leads.
- Plan the location of loading coil cases in manholes and on poles.
- Design routing of stub cables and location of splices to main cables.
- Decide on necessity for and position of an intermediate stub cable.

Grade C

- Perform Grade D work when necessary.
- Make final inspection of finished work as to workmanship, installation, standards, protection, specifications, etc.

Grade B

- Perform Grade C work when necessary.
- Explain and demonstrate any splicing operation to workers.

Coach men in the development of skill.
Instruct men in elementary theory, safety practices, first aid treatment, working regulations, etc.

Grade A

Perform Grade B work when necessary.
Order the required materials and tools necessary for larger jobs.
Supervise distribution of materials and tools when delivered.
Direct the work of a small group of spicers and helpers.
Study and practice on the training subjects recommended for this assignment as an aid to self-improvement.
Develop proficiency in all grades of this work as a requirement for advancement to one of the following:

Splicers' Foreman.
Shop Splicers' Foreman.

In the following specification for Splicer's Foreman, the objectives of the job have changed completely from technical production to planning work and supervising men. Therefore, promotion of those who, however skillful they may be, prove unable to plan and supervise is limited by this fact.

SPLICERS' FOREMAN

Supervises the work of crews engaged in any kind of splicing.
Located in city area—construction force.

Objectives

Perform, when necessary, any work done while a Senior Splicer.
Lay out work to be done by each splicing crew.
Assign proper grade of splicer and helper to each crew.
Transport men and materials to locality of work.
Give direct instructions to individual employees in the performance of their work.
Maintain a high degree of morale in the working crews.
Obtain maximum production under normal conditions.
Obtain effective results in emergency work.
Discuss intelligently, with the workmen, any problems which may arise concerning Company regulations, compensation, hours, conduct, working conditions, etc.
Enforce safety and working regulations.
Make an intelligible report on any angle of splicing work, men or materials.
Read and study on the training subjects recommended for this assignment, as an aid to self improvement.
Develop proficiency in this work as a requirement for advancement to District Splicers' Foreman.

SHOP SPLICERS' FOREMAN

Supervises the work of the shop splicing force and does all lead work.
Located in city area—construction force.

Objectives

- Perform, when necessary, any work done while a Senior Splicer.
- Slip lead sleeve, heat in ends, pour in lead and wipe a straight, "Y" or multiple joint on the smaller and medium sized cables.
- Dress cables after completion of splice.
- Correctly interpret diagrams and instructions (written or verbal).
- Recognize the relative importance of the different jobs in the shop and schedule them accordingly.
- Distribute jobs to each workman in keeping with his capabilities.
- Give direct instructions to individual employees in the performance of their work.
- Explain and demonstrate the operations of shop splicing and coach men in the development of skill.
- Instruct men in elementary theory, safety practices, first aid treatment, fire prevention and working regulations, etc.
- Obtain maximum production under normal conditions.
- Obtain effective results in emergency work.
- Inspect and pass on quality of work done.
- Supervise shop conditions as to cleanliness, habitableness and upkeep of equipment.
- Enforce fire protection and safety regulations.
- Make out time and material reports for self and each shop workman according to approved methods.
- Make an intelligible report on any angle of shop splicing work, men or materials.
- Maintain a high degree of morale in shop force.
- Discuss intelligently, with the workmen, any problem which may arise concerning Company regulations, compensation, hours, conduct, working conditions, etc.
- Read and study on the training subjects recommended for this assignment as an aid to self improvement.
- Develop proficiency in all grades of this work as a requirement for advancement to District Splicers' Foreman.

DISTRICT SPLICERS' FOREMAN

Generally supervises all cable splicing activities within a given geographic district.
Located in city area—construction force.

Objectives

- Perform, when necessary, any work done while one of the following:
 - Shop Splicers' Foreman.
 - District Splicers' Foreman.

- Correctly interpret general instructions of superintendent.
- Give fundamental information and instruction to foremen when passing orders to them.
- Shift splicing crews and foremen in order to obtain most efficient and effective results.
- Discuss with men of higher rank the volume of work versus force requirements.
- Judge men on their merits and intelligently recommend them when qualified for promotion.
- Co-operate with other District Foremen in charge of work directly or closely associated with splicing.
- Make full and intelligible reports on progress of work in local district.
- Read and study on the training subjects recommended for this assignment, as an aid to self improvement.
- Prepare, by diligent application in this assignment, for selection to advance into a broader and more important field of work.

The foregoing pyramid of splicers is but one of many similar series of jobs of progressively increasing difficulty and responsibility. The application of the idea in a different field is illustrated by the following sample pyramid from the Commercial Department of a telephone company:

STUB CLERK

Does all bill stub work in connection with subscribers' payments by MAIL.

Located in city area—business office of multiple unit type.

Objectives

- Apply, when necessary, any knowledge or experience gained prior to entrance as a new employee.
- Keep desk and papers in order.
- Do any simple clerical work which the person in charge may direct.
- Open, verify, sort and distribute mail.
- Prepare adding machine totals of checks and bill stubs, for balancing.
- Endorse checks with hand stamp preparatory to depositing.
- File stubs in numerical order.
- Compare treatment stub file with current bill stubs and withdraw corresponding stubs for crediting.
- Cancel bill stubs with hand machine.
- Receipt subscribers' bills with hand stamp.
- Mail receipted bills to subscribers requesting them.
- Give verbal report immediately upon receipt of payments from subscribers whose service has been denied.
- Answer telephone in a courteous manner and give prompt attention to any requests thus made.
- Comply with Company regulations as to hours, conduct, etc.

Read and study on the training subjects recommended for this assignment, as an aid to self improvement.

Develop proficiency in this work as a requirement for advancement to Collection Clerk.

COLLECTION CLERK

Handles telephone inquiries pertaining to collections. Also does the detail work involved in the collection treatment of amounts.

Located in city area—business office of multiple unit type.

Objectives

Perform, when necessary, any form of work done while a Stub Clerk.

Discuss collection disputes with subscribers by telephone.

Prepare credit memoranda covering adjustments or allowances.

Initiate and follow up toll inquiries to distant points.

Investigate and report on toll inquiries from distant points.

Prepare treatment notices and supervise the details of mailing them.

Give notice to subscribers by telephone prior to denial of service.

Make, check and forward service denial lists.

Order the restoration of service promptly, when settlement of account has been made by subscriber.

Investigate causes for returned mail and adjust accordingly.

Assemble and file final account data.

Establish and maintain final account ticket file.

Arrange for personal collection treatment of overdue final accounts.

Prepare proper forms for use in bankruptcy, estate, suit or other legal proceedings as directed.

Set up monthly recommendations covering the writing off of non-collectible accounts.

Read and study on the training subjects recommended for this assignment, as an aid to self-improvement.

Develop proficiency in this work as a requirement for advancement to Senior Collection Clerk.

SENIOR COLLECTION CLERK

Handles collection inquiries received by MAIL. Also generally supervises the details of the collection work.

Located in city area—business office of multiple unit type.

Objectives

Perform, when necessary, any form of work done while a Collection Clerk.

Direct subordinate employees in the conduct of their work.

Decide on the nature of the replies to be made to collection inquiries received by mail.

Dictate correspondence, etc., to stenographer.

Originate "charge backs" to Telegraph Companies.

Authorize extension of credit when justified by circumstances.

Verify the service denial lists before service is denied.

Review and verify service denial lists daily.

Issue disconnection orders when prescribed conditions develop.
Read and study on the training subjects recommended for this assignment, as an aid to self improvement.
Prepare, by diligent application in this assignment, for selection to advance into a broader or more important field of work.

TELLER

Receives cash payments made in person. Also prepares reports covering moneys received.

Located in city area—business office of multiple unit type.

Objectives

Apply, when necessary, any knowledge or experience gained prior to entrance as a new employee.
Do any clerical work which the person in charge may direct.
Keep counter and papers in order.
Receive cash from individuals making payment in person.
Detect spurious moneys.
Operate a change machine.
Receipt subscribers' bills and stubs with hand stamp.
Sort bill stubs and moneys.
Prepare adding machine totals of all payments and bill stubs, for balancing.
Prepare daily record of total payments, subdivided as between central office districts.
Comply with Company regulations as to hours, conduct, etc.
Read and study on the training subjects recommended for this assignment, as an aid to self improvement.
Develop proficiency in this work as a requirement for advancement to Cashier.

CASHIER

Generally supervises the work involved in the receiving of cash payments. Also handles the petty cash of the Business Office.

Located in city area—business office of the multiple unit type.

Objectives

Perform, when necessary, any form of work done while a Teller.
Direct and supervise subordinate employees in the conduct of their work.
Inspect funds prepared for deposit and make out deposit slip.
Prepare daily cash summary report.
Maintain memoranda record showing special distribution of receipts.
Write detailed reports covering checks not honored by the bank.
Prepare semi-monthly report of accounts to be recharged.
Make petty cash payments in cash or by check.
Audit vouchers and bills before paying.
Keep stub record of checks drawn.
Prepare forms covering claims for reimbursement.

- Prepare forms showing analysis of disbursements by accounts.
- Keep working advance fund in balance.
- Read and study on the training subjects recommended for this assignment, as an aid to self improvement.
- Prepare, by diligent application in this assignment, for selection to advance into a broader or more important field of work.

OUTSIDE MAN

- Collects outstanding payments through personal visits to patrons.
- Also canvasses new business in same way.
- Located in city area—business office of the multiple unit type.

Objectives

- Apply, when necessary, any knowledge or experience gained in prior telephone work or elsewhere.
- Visit patrons at their residence or place of business.
- Endeavor to secure through verbal effort the payment of accounts rendered.
- Authorize minor adjustments when justified by circumstances.
- Receipt subscriber's bills in recognition of payments received.
- Prepare individual forms covering payments collected and turned in.
- Prepare report on probability of later collection, in unsuccessful cases.
- Secure new subscriptions for telephone service through verbal effort.
- Prepare service record cards covering new subscriptions.
- Perform miscellaneous office duties assigned by superior.
- Read and study on the training subjects recommended for this assignment, as an aid to self improvement.
- Prepare, by diligent application in this assignment, for selection to advance into a broader or more important field of work.

The value of job specifications is fully recognized for all forms of manual work. It is easy to see that they are useful in organizing shops and in training mechanics to greater skill and output. Many, however, still doubt their applicability to professional work. The following samples from the Engineering Department of a Telephone Company describe some of the jobs college graduates begin with. To these are added General Counsel, Comptroller, Treasurer, Statistician, General Auditor, Purchasing Agent, Advertising Manager, and Industrial Traffic Manager, compiled from data from several other companies. It is hoped that these will be sufficient to demonstrate the essential points of a carefully developed form and indicate that it is of no less value in studying the most complex professional work and in selecting and training men for these higher positions.

EQUIPMENT JOB ORDER MAN

Prepare job orders for minor additions to and changes in central office equipment and large private branch exchanges.

Located in Equipment Plans force.

Objectives

Apply, when necessary, any knowledge or experience gained prior to entrance as a new employee.

Gather information in sketch and note form, from existing installations, or from records, for use in formulating plans.

Determine how any special construction and maintenance features of job are to be met.

Select the standard circuits and equipment best suited to the job.

Determine if there is need for special circuits or equipment.

Decide on proper arrangement of equipment on floor, switchboard, frames, racks, etc.

Conclude on best method of cabling and wiring.

Confer with superior on tentative plans for obtaining suggestions on his preliminary approval of them.

Direct draftsman in making working sketches and drawings of equipment, floor plans, cabling and circuits layouts.

Prepare lists of apparatus, cabling, circuits, drawings, etc., for job.

Estimate construction, removing, rearrangement, depreciation and salvage costs.

Prepare lists job orders according to approved practices.

Edit requisitions for equipment needed.

Write letters covering subsequent modification of plans.

Answer questions of manufacturer or installer regarding proposed changes.

Cooperate with those engaged on power plans, if job has any power features.

Comply with Company regulations, as to hours, conduct, etc.

Read and study on the training subjects recommended for this assignment, as an aid to self improvement.

Develop proficiency in this work as a requirement for advancement to Specification Man.

EQUIPMENT SPECIFICATION MAN

Prepares specifications for new or extensive modifications of central office equipment and large private branch exchange.

Located in Equipment Plans force.

Objectives

Perform, when necessary, any form of work done while a Job Order Man, but applied to major projects.

Prepare specifications (skeleton or detailed) according to approved practices.

Read and study on the training subjects recommended for this assignment, as an aid to self-improvement.

Develop proficiency in this work as a requirement for advancement to Equipment Plans Checker.

EQUIPMENT PLANS CHECKER

Checks all job orders and specifications for new or modifications of central office equipment and large private branch exchanges.

Located in Equipment Plans force.

Objectives

Perform, when necessary, any form of work done while a Specification Man.

Examine finished job orders, specifications, sketches, drawing lists, requisitions, letters, etc., both as to form and content.

Check important computations wherever they appear.

Observe if approved form, phraseology and terminology has been used.

Note whether special points have been clearly expressed.

Be sure that the provisions of all plans are sound from construction and maintenance standpoint.

Determine if all papers involved are properly co-ordinated.

Point out discrepancies to men who prepared plans and supervise the corrections.

Make certain that job has been completely covered from all angles.

Coach inexperienced men in their work.

Read and study on the training subjects recommended for this assignment, as an aid to self improvement.

Develop proficiency in this work as a requirement for advancement to Equipment Plans Supervisor.

EQUIPMENT PLANS SUPERVISOR

Supervises the work of preparing all plans for new or modifications of central office equipment and large private branch exchanges.

Located in Equipment Plans force.

Objectives

Perform, when necessary, any form of work done while an Equipment Plans Checker.

Interpret correctly general instructions of immediate superior.

Take note of Traffic, Plant and other recommendations officially made for new and additional equipment.

Assign official recommendations to proper members of force for attention.

Give individual instructions to and aid men in the development and completion of their plans.

Attend schedule conferences and see that jobs are satisfactorily placed on manufacturing and installing schedules.

See that plans are completed and issued in accordance with schedule.

- Obtain maximum production from force under normal and emergency conditions.
- Maintain a high degree of morale among employees of force.
- Discuss intelligently with employees any problem which may arise concerning Company regulations, compensation, conduct, etc.
- Co-operate with others engaged in similar and closely associated work.
- Explain and confer on engineering features of proposed and current jobs when called upon.
- Read and study on the training subjects recommended for this assignment, as an aid to self improvement.
- Prepare, by diligent application in this assignment, for selection to advance into a broader or more important field of work.

PRELIMINARY PLANS MAN

- Lays out preliminary floor plans for new or modifications of central office equipment and large private branch exchanges.
- Located in Equipment Plans force.

Objectives

- Apply, when necessary, any knowledge or experience gained in previous telephone work or elsewhere.
- Plan several different combinations of floor plan lay-outs by use of templates.
- Give due consideration to provision for and growth of cable runs, weight of apparatus, height of equipment, ventilation, lighting, etc.
- Direct draftsman in making scaled drawings of preliminary plans.
- Confer with superior on tentative plans for obtaining suggestions or his preliminary approval of them.
- Consult those engaged on building plans as to practicability of preliminary plans from standpoint of building construction.
- Assist in checking initial floor plans submitted by Architect, in order to ascertain whether equipment features of preliminary plans have been substantially preserved.
- Read and study on the training subjects recommended for this assignment, as an aid to self-improvement.
- Prepare, by diligent application in this assignment, for selection to advance into a broader or more important field of work.

This concludes the illustrations of job specifications selected from the experimental work in the telephone field. The following samples have been compiled by the Council from other sources. Hence, they do not necessarily completely reflect the work in any individual company.

GENERAL COUNSEL

- Directs all activities for which the Legal Department is responsible.
- Located in legal force.

Objectives

- Apply, when necessary, any knowledge or experience gained in previous positions held.
- Cooperate and counsel with department heads in company on all legal matters.
- Confer with company officials or with public officials on questions of legal importance.
- Prepare and file applications, pleadings and other formal papers in cases before courts or regulatory bodies.
- Study company interests and prepare arguments for use in legal proceedings involving rates, accidents, damages, property rights, etc.
- Discuss with witnesses the testimony to be offered by them in company's behalf.
- Direct and, if necessary, take part in examination of witnesses, arguments, etc., at public hearings.
- Examine and draw pertinent information from departmental reports, records, etc.
- Speak before company or public gatherings.
- Keep posted on the more important current developments in legal, political, industrial, financial, etc., fields.
- Interview and select capable employees for legal force.
- Give fundamental information and instructions to legal force in assigning problems, investigations, duties, etc.
- Supervise work of legal force and consult with employees in the solution of legal problems.
- Review all complaints filed with local regulatory bodies against company.
- Refer and letter complaints to proper department for attention and subsequently report company action to regulatory bodies.
- Consider and approve form of legal documents prepared in various departments.
- Supervise the assessment and payment of all company taxes.
- Review all papers concerning suits, actions, etc., referred to Legal Department for advice or attention.

COMPTROLLER

Objectives

- Prepare such financial statistics and reports of the company's operations as may be required and has authority to require from all departments and houses such information as may be necessary to prepare such statistics and reports.
- Take charge of the accounting methods of the company in all departments and at all houses.
- Audit all accounts of the company.
- Represent the company in its relations with public accountants selected to certify to any published reports.

- Prepare financial forecasts for use in determining the company's financial policy.
- Obtain estimates from the general departments for the succeeding year.
- Prepare budgets for the departments and for the company.
- Place insurance in such amounts and in such a manner as may be determined to be the company's established policy.
- Approve all data on taxes and other statistical reports submitted to the general counsel before filing with public authorities.
- Approve all purchase and sales contracts which are on a cost-plus basis.
- Prepare and issue general instructions sent out under the authority of the president or vice-president.
- Obtain recommendations from the various general departments as to changes in employees' rates of pay and submit summaries to the president and board of directors for their consideration and approval.
- Advise on accounting personnel in all departments and at all locations.
- Assign work to the following departments:
 - Accounting Department.
 - General Statistical Department.
- Approve all extra compensation plans.
- Certify to the amount earned by employees under compensations plans.

TREASURER

Objectives

- Give receipts for all vouchers in favor of the company.
- Disburse in settlement of all invoices or orders which have received proper approval.
- Take receipts or vouchers for them.
- File and preserve a record of all expenditures.
- Deposit cash receipts and borrowed funds.
- Set up and maintain petty cash funds.
- Be responsible for the transfer of funds to the company's depositories.
- Invest surplus cash.
- Take custody of bonds and certificates, promissory notes and other negotiable instruments, contracts, leases, deeds, insurance policies tax reports, copyrights and patents.
- Endorse all negotiable instruments.
- Sign all bonds and certificates of stock.
- Bond employees to whom delegates authority.
- Act in respect to the company's stock issues and transfers where the company acts as its own registrar.
- Make out report to the board of directors as to cash position.
- Take charge of credits and collections.
- Prepare and submit an efficiency statement of the treasurer's office to the proper officials.

Supply company with all the cash it requires both for current matters and for capital expenditures.
Maintain cash budget.

STATISTICIAN

Objectives

Take charge of the general statistical studies of the company.
Analyze and correlate statistics regarding all phases of the business and present these statistics in graphic or summarized form to the executives.
Review all reports being issued and prepare graphic charts for as much of the data as possible, so that the executives can detect important trends of the business accurately and easily.
Suggest the compilation of additional information considered necessary and eliminations of any reports and statistics considered unnecessary.
Cooperate with other departments in such of their studies as are based in part on the statistical records in his office.
Advise officials of the company on the general business condition of this country and other countries.
Keep in contact with state and national agencies, furnishing statistical information.
Make studies of statistics of the company and its subsidiary companies.
Make forecasts and recommendations as a result of these studies to the end that the company may act intelligently and quickly in increasing or decreasing commitments in order to anticipate the expected increase or decrease in sales to customers.
Advise the accountants and statisticians in the various departments of the company and the officials of the subsidiary companies assigned to this work, so that they may at all times be informed as to the trend of affairs with particular reference to the reaction of the trend on their own business.
Make such financial studies as may be necessary to advise as to the probable cause of interest rates.
Advise other departments of the company where statistical studies are being made.
Maintain a general library and a key index to information available within the company.
Maintain files of all sufficiently important statistical reports and analyses prepared by the various departments of the company.
Make studies of foreign exchange conditions in this and other countries to the end that intelligent action may be taken on the transmission of funds from one country to another country.

GENERAL AUDITOR

Objectives

Take charge and be responsible for the work of the Auditing Department.

- Submit all reports to the president.
- Prescribe the rules and conditions under which payments are authorized in all departments of the company, subject to the approval of the president.
- Audit the accounts of the financial officers of the company, and those of other employees who are entrusted with company funds.
- Audit the accounts of the treasurers of subsidiary companies.
- Audit the transactions in fine metals and minerals.
- Determine that surety bonds have been secured for employees as prescribed by the treasurer.
- Check commitments and disbursements applying on specific plant appropriations granted by the board of directors.
- Certify to the correctness of reports covering such specific plant appropriations before they are presented to the board of directors.
- Audit the journal entries of all departments of the company.
- Audit other records and accounts in all departments of the company, either completely or by test check.
- Consult with the European comptroller and officials of allied companies as to auditing methods and routine to be followed in the foreign associated and allied companies.

PURCHASING AGENT

Objectives

- Prepare intelligible specifications covering the quality of material to be purchased and provide the means for checking deliveries against these specifications.
- Buy all materials and service required for the company, and be responsible for these until they are delivered to the consuming department.
- Obtain the best possible cash discount for the prompt payment of vendors' invoices.
- Compare the various items appearing on the invoice with the purchase order to see that the former is correct.
- Cooperate with the Industrial Traffic Department so that shipments may be properly routed and delivered when and where required.
- Study business conditions and markets.
- Investigate new materials and equipment.
- Establish relations with supplies and investigate possible new sources of supplies.
- Keep a record of quotations.
- Keep an adequate record of purchases in files which are readily accessible. (These records should be comprehensive with respect to nature of material purchases, quantities bought, from whom purchased and price paid.)
- Make a complete audit of invoices with respect to prices, terms, footings and extensions and prepare invoices for prompt payment.

- Maintain a complete file of catalogues of material pertaining to the business with which the Purchasing Agent is associated. (These files should be revised from time to time to bring them up to date.)
- Dispose of obsolete material and equipment.
- Keep the raw material inventory at the lowest possible figure consistent with business and market conditions.
- Keep in touch with the general activities of the company and tax service departments.
- Interview salesmen who call personally and put them in touch with the technical men of the organization.
- Study sales literature received.
- File claims.
- Interest self in the company's personnel by assisting them in personal purchases and procuring special discounts for them.
- Secure such claims as are necessary as the result of the receipt of goods damaged in transit.
- Inform all department heads of any developments of materials, devices, equipment, prices, etc.
- Cooperate with the production department by having sufficient materials on hand to meet its schedule and by having material available to take care of any of the changes in schedule.
- Cooperate with the engineering department by adhering strictly to their specifications, advising them of similar materials or equipment at lower costs or better delivery, and by securing their approval before any change is made in specifications.
- Cooperate with the inspection department by ordering the best material consistent with price and service, and by carefully heeding their complaints and informing them of any changes of materials and giving reasons for same.

ADVERTISING MANAGER

Objectives

- Prepare and present plans for the advertising activities of the company, correlating all such plans very definitely with the program in sales development as laid down by the sales organization.
- Supervise the execution of these plans as carried out either by:
 - a. The personnel of the advertising department.
 - b. The advertising agencies or agency which the company employs.
- Supervise the preparation of art work required in advertising and printing matter.
- Serve as contact officer with the advertising agency.
- Supervise correspondence, particularly with consumers, relating to the company's advertising.
- Supervise distribution of advertising material throughout company, being sure that executives are not bothered with unimportant publications.
- Receive solicitations of proposed advertising plans media and determine their relations to the requirements of the sales plan.

Help determine the sales program to adequately apply the costs of advertising to accomplish the desired sales objectives.

Make the necessary contacts with all parts of the business or with trade in developing its part of the work.

Coordinate such relations with the activities in the department as such.

Take charge of the various publicity efforts of the company not placed through an agency. (This includes not only advertising material, but stationery, printed matter, delivery wagons, signs, buildings and policies relating to courtesy and promptness, all of which help form the reputation of the company.)

Carry on the preparation of advertising, study of media, study of markets, and application of advertising to such markets in conjunction with the program of sales effort.

Make up and distribute the advertising budget and exercise constant control over the expenditures of the department.

Maintain the necessary contacts with other departments and particularly with the managing executives.

Maintain proper contact with the advertising agencies, interpreting to them the problems and policies of the company, and passing upon their work in the company's behalf.

Keep abreast of developments in paper, printing, engraving and other processes of duplication.

Interpret the business as a whole to its clientele and to the industry it represents.

Plan ways and means of keeping the institution in right relationship to its civic responsibilities and opportunities.

Train assistants.

Maintain contact with the publishers of such magazines or newspapers as the firm may be using.

Maintain files of all advertisements and printed matter in a form suitable for reference.

Direct the preparation of such literature as is created in the advertising department.

Check results constantly, and in the light of the lessons thus learned, reshape the work of the department.

Keep financial and statistical records relating to advertising.

Attend conferences with president, sales manager, and other officials, taking part in the discussions.

Direct research into conditions of trade and community development likely to affect judgment in formulating plans.

Supervise public relations and interpret the ideals, policies, and important developments within the organization to the public.

Inform the Sales organization in the field as to the company's advertising policy and plans.

Equip the Sales organization in the field with the necessary visual-

zation of current and contemplated campaigns for presentation to the trade.

INDUSTRIAL TRAFFIC MANAGER

Objectives

- Choose the kind of transportation to be purchased in a given case, whether it be rail, steamship, truck, express or any other way of shipping.
- Choose the most favorable route.
- Determine to what extent less-than-carload shipments may be consolidated into carload lots for redistribution.
- Establish warehouses to serve as distribution reservoirs.
- Select sites for plant and warehouses.
- Comply with the regulations of the carriers relating to the marking of containers so as to avoid assessments of penalty charges for non-compliance with the carriers' regulations.
- Take advantage of import and export rates and use ports having the lowest freight rates to and from that point.
- Determine whether the proper classification is being secured for the goods of the firm and be able to describe what is to be shipped in terms used in this classification.
- Study and keep close watch of transportation legislation and rulings.
- Apply properly, storage and demurrage rules affecting collection of moneys in connection therewith.
- Secure terminal and yard service, both industrial and railroad.
- Take advantage of diversion, reconsignment, and in-transit privileges.
- Check freight bills.
- Handle claims for loss, damage or overcharge.
- Study the effect of traffic rates upon the competitive situation.
- Install freight tariff file and keep it up-to-date and in good working order.
- Determine whether the rates applying to commodities shipped to or by the firm are just and equitable as compared with rates on other commodities, and compared with the rates on the same commodities from other locations to various destinations.
- Advise purchasing agent as to the rates from all possible sources of supply for raw materials.
- Issue bills of lading.
- Handle export shipments.
- Secure consular papers and ocean insurance.
- Apply properly the 43 rules of the Consolidated Freight Classification.
- Present definite proposals with substantiating evidence, when preparing rate proposals, classification petitions and other propositions of this nature.
- Classify the Traffic Department, embodying the Shipping Department and possibly the Receiving Department, so that the routine services and the constructive services will properly function.

Maintain an adequate library of traffic and railroad publications.

Hold conferences of the various traffic subordinates in order to take advantage of any constructive ideas which might be offered and apply them to the best advantage of the firm.

Win and retain the good will of the firm's customers by attending to their traffic needs, more particularly expediting shipments, advising proper freight rates, etc.

Keep in contact with the carriers' representatives at all times by attending conferences or meetings of reputable industrial organizations, such as the National Industrial League, Shippers' Advisory Board, and Traffic or Transportation.

Make Pullman reservations and purchase of steamship or railroad tickets for employees traveling on company's business.

ADVANTAGES OF JOB SPECIFICATIONS IN INDUSTRY

From the foregoing illustrations it appears that the following definition is appropriate:

"A job specification is a series of statements which define the essential things that should be accomplished in performing proficiently the duties of a given assignment."

Considerable experience with job specifications written in the form illustrated in the foregoing pages shows that they are of the following uses in industry:

From management standpoint.—Job Specifications:

Give better understanding of type of employee required for each job.
Form a basis for interview and examination of prospective employees.
Furnish information for placement of those who may have certain physical handicaps.

Form a basis for the design of Application and of Progress records.
Form the basis of a training schedule for every employee.
Form the basis of tests to determine if applicant is eligible for appointment or an employee is fitted for promotion to a higher job.
Give detail information as to scope and limitations of every job.

From employee's standpoint.—Job Specifications:

Make available clear descriptions of the features and requirements of all jobs, thus giving an opportunity to select and qualify for one of which the applicant or employee would otherwise have no knowledge.

Furnish a program of progressive steps and thus promote incentives to advance.

Give suggestions as to how to improve himself in order to do his particular job better and train for advanced work.

Promote good will because of the clear understanding which the employee gets regarding his work and opportunities.

From standpoint of outside agencies, Job Specifications, when generally adopted by industry,

Define the requirements of the industrial field in such manner as to enable educational institutions to train prospective employees more suitably for their vocations; thus benefiting both worker and industry.

Enable the Government in times of emergencies more intelligently to classify the mobilized forces; thus facilitating the process of

assigning individuals to posts more suitable to their peculiar abilities.

Establish a means of determining the levels of ability required for each grade of employment throughout each industry.

Form a basis for establishing common terminology for similar occupations in different industries as far as practicable.

ADVANTAGES OF JOB SPECIFICATIONS TO EDUCATION

Direct uses of job specifications to specialized training in industry have been mentioned in the preceding sections. It was there shown how the objectives of the job define goals for the worker to achieve, and how a pyramid outlines a progressive growth in skill and mastery over jobs of increasing difficulty and responsibility. The content of the pyramid also guides the company in organization of supplementary materials of instruction, in development of tests of all sorts, and in determining relative proficiency and standards of achievement.

Clearly job specifications have the same direct application to trade instruction in schools. In this case, if intensive work is to be given, it is necessary to analyse each of the objectives of the job into simpler elements or jobs which can be conveniently handled in a school program. For example, the job specification for a tire repair man reads: Repair injuries to automobile tires. Classification of all forms of tire injuries and analysis of their cures shows that the following 28 simple operations include all elements of skill which an expert tire repair man must have. These also define the materials of instruction for the course.

- | | |
|--------------------------------------|---|
| 1. Vulcanize small hole. | 17. Retread, using kettle. |
| 2. Vulcanize cut or blowout. | 18. Retread, dry cure method. |
| 3. Splice inner tube. | 19. Cure sectional repair. |
| 4. Apply valve pad. | 20. Cure inside repair. |
| 5. Replace valve stem. | 21. Preserve tread pattern. |
| 6. Repair tread cut. | 22. Tread cut (Silvertown cable
cord tire repair). |
| 7. Repair mud boil. | 23. Replace cord section. |
| 8. Repair scraped sidewall. | 24. Make sectional repair. |
| 9. Repair rim cut. | 25. Apply cord patch. |
| 10. Repair fabric break. | 26. Make sectional repair, cord
truck tire. |
| 11. Repair half section. | 27. Make sectional repair, clincher
type. |
| 12. Repair full section. | 28. Make sectional repair, rope
tires. |
| 13. Repair top section, fabric. | |
| 14. Repair inside sectional, fabric. | |
| 15. Repair inside and outside. | |
| 16. Retread a tire, fabric and cord. | |

This process of analysing job specifications into simpler elements is called "job analysis." Specifications may be analysed in many different ways, not only for purposes of instruction, but also for determining relative proficiency, lines of promotion, classification systems or terminology. Much of the success of training depends on how well the job analysis is done.

The effectiveness of technical training can be much increased and at the same time other liberal educational values secured by carrying the job analysis one step further. While many of the operations in skilled work require thought and judgment, high skill depends also on fine coordination of nerve and muscle to the point where certain motions or actions become automatic. Such automatisms are established by drill. Therefore it reduces training time if the desired automatisms are separated from those exercises that require thought, and properly designed drills are given to develop them.

In like manner technical training may have a powerful influence in making men more honest, more accurate, more dependable, and more industrious. It may also foster the development of habits of critical thinking, of weighing evidence, of discerning controlling elements in situations, of evaluating relationships, and of deducing consequences. The manner in which the work is done has, in addition, important results in determining student attitudes toward school and even toward life itself. When the work is well done, these desirable habits and attitudes evolve spontaneously in most people. It helps the instructor to achieve the desired result if the habits and attitudes that may be fostered by a particular job are listed separately in a third column of the job analysis. No attention is paid to this list when all goes well. But when the individual fails to develop the desired attitudes, or when bad habits appear, special individual treatment is given. This may call for services of a physician or a mental hygienist. Making an instructor pay conscious attention to developing attitudes and habits of his student has proved most useful in many cases.

It was on the basis of a triple job analysis of this sort

that the course of training radio code operators in the army was developed and the time of training reduced about half. The following sample from that analysis indicates how it is made:

RADIO OPERATOR

Objectives

Transmit and receive in International code 15 code groups of five letters each per minute, for three minutes, transcribing received signals with pen or pencil in printed characters with a maximum of six erroneous letters.

Set up and make the necessary connection with the operation of ordinary types of radio sets.

Make necessary adjustments for the proper tuning and operation of radio sets.

Test for serviceability and care for storage batteries used with radio sets.

JOB ANALYSIS

<i>Automatism</i>	<i>Content</i>	<i>Habits and Attitudes</i>
Letter	Primary batteries	Analyse situations
Receive code	Series and parallel connections	Evaluate elements
Send code, etc.	Storage batteries	Diagnose difficulties
	Resistance	Weigh evidence
	Magnets	Discern relationships
	Wave meter	Plan action
	Transmitting set	Act honestly
	Receiver	Work accurately
	Lettering	Cooperate
	Receiving	Deal squarely, etc.
	Transcribing, etc.	

This triple job analysis may be applied with benefit to almost any type of occupation or social activity. A good exercise for those who wish to try it out in the social science field is to make such a triple analysis of the items in the following job specification:

AMERICAN CITIZEN

Objectives

Form a more perfect union.

Establish justice.

Insure domestic tranquillity.

Provide for the common defense.

Promote the general welfare.

Secure the blessing of liberty to himself and his posterity.

What are the automatisms, the techniques, the habits and the attitudes characteristic of people who succeed in establishing justice? What are essential conditions of domestic tranquillity? What do people do to insure its maintenance? What is the general welfare? How do people act to promote it?

The foregoing methods of analysing job specifications apply mainly to specialized training devised to produce skilled workers in specialized fields. For purposes of general education, such as should be given at least through the first six grades, a different treatment is necessary. When a wide range of specifications for a great variety of occupations are studied, it is found that certain expressions occur with relative frequency. Examples of such expressions are: File documents, classify, make reports, arrange, interpret sketches, read meters, prescribe first aid, balance accounts, keep records, abstract reports, make out checks, traffic regulations, fire prevention, operate furnace, etc. Such skills are needed in many occupations. They are "Common" elements of the world's work with which everyone should be at home.

Skills of this sort are not acquired adequately by mere drill in the mechanics of the operation. For example, if one is to do a good job at filing documents, or classifying, or abstracting reports, he must analyse, discern relative importance, detect relationships, weigh evidence, and draw consistent conclusions. Training in these habits may be given in many of the present courses in schools. It is such material as this that a job analysis of job specifications yields as an aid to general education. Analyses of this sort are in progress.

In addition to these direct applications to school practice, job specifications are most useful in vocational guidance. When well written they give a clear and vivid description of each type of work. A person's instinctive reaction to this kind of a picture is an indication of his interest. Most employment, especially in higher professional work, is done on the basis of informal verbal job specifications. Accurate printed statements are even more effective.

The art of interpreting job specifications for purposes of

education is far less well developed than is the art of writing them. This is perfectly natural. With the help of suitable directions,¹ any normal person can write a good specification for his own job. But interpretation requires insight and balanced judgment. Character, vision, creative imagination are the ultimate aims of education. These do not appear in job specifications and must not be sacrificed to the practical and more elemental need for learning to earn a living.

Educators very properly have their attention focused on the ultimate aims of education. They have little opportunity to know intimately either the practical requirements of the world's work or the impractical bungling of young graduates in their first efforts to earn their salt. Business men appreciate the high aims of education but must master the material difficulties of existence lest we all starve. They cannot pay one dollar for sixty-cent achievement and live. Hence, misunderstandings arise, and taxpayers demand that schools deliver goods that are clearly worth the price.

Job specifications establish mutually intelligible communication between industrialists and school men. They open the way for complete removal of all misunderstandings. But their chief significance does not lie in this alone. Their fundamental importance comes from the fact that they lead first to understandings and then to actions that are educationally sound. Schools are finding that well written job specifications help them substitute real achievement for academic credit. Industries are finding that they help them develop men while making profits. Practical methods of consciously developing character while learning to do real jobs are evolving through their intelligent use.

Job specifications that yield the information schools need to build better citizens are now available. By making wise interpretations, education can increase its power to release and develop human talent. And as the quality of the school work improves, the controversy over costs recedes and ultimately vanishes.

¹ The Council has published such a pamphlet and will be glad to send it on request.

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Job Specifications

AMERICAN COUNCIL ON EDUCATION

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Washington, D. C.

INTRODUCTION

Expenditures for public education in the United States are rapidly increasing. They have more than doubled since 1920. Though Americans have profound faith in schools as the wisest possible investment for self-governing people, they are restless under the increasing burden of taxation. Therefore they are beginning to demand justifications of costs in terms of tangible results. And since many of the results of education are intangible, an ominous tendency to cut costs of education any way is appearing. Industry has achieved low production costs of fine goods by scientific study and elimination of wastes. Pressure is being brought on schools to do likewise.

Schools are making notable progress both in application of scientific methods to education and in elimination of wastes. But educational profits cannot be displayed objectively on a balance sheet at the end of each fiscal year. Meanwhile costs continue to rise and taxpayers are getting impatient. Already a number of school budgets have been ordered reduced by governors or school boards without regard to educational consequences. Other similar budget cuts are in prospect unless a better mutual understanding can be reached by business and education with regard to schools.

One very obvious way of reaching such a mutual understanding is to make schools deliver goods the public needs at a price the public is willing to pay. During the war many schools did this for the army. The procedure was very simple. The army had a vital and very definite mission. Specific objective results had to be accomplished in record time. The army studied its mission and wrote job specifications listing the things each type of skilled worker does in a military unit. The schools analysed each such job specification into a progressive series of school exercises that would develop the required skills quickly in properly selected soldiers. Notable results were secured. Competent telegraph operators were developed in five months, though ten months had previously been required. Inexperienced

men became journeymen carpenters or blacksmiths in a much less time than had been considered possible. Reports on this intensive technical training that was developed in the crisis by cooperative effort of the War Department and the schools were published, in 1919, by the War Department in two monographs entitled respectively "The Committee on Educational and Special Training" and "The National Army Training Detachments."

Besides this new form of intensive technical training, the Army developed two other agencies that were indispensable to better appraisal of individual abilities and better placement of the right man in the right job. The first of these was the Division of Psychology of the Surgeon General's office. This Division produced the well-known Army Alpha test that was given to more than two million soldiers, thereby demonstrating the enormous range of individual differences among young men with regard to "mental alertness" or whatever the test measured. The results also indicated a probable relationship between test score and type of work suited to each individual.

The second of these agencies was the Committee on Classification of Personnel. This committee developed qualification cards, trade specifications, trade tests, performance tests, and personnel specifications as practical tools designed to facilitate the process of discovering talent and assigning it where most needed. Complete reports of the work of both of these agencies have been published.

These three agencies were established independently, each in response to a specific recognized need for improvement in the mobilization machinery. Their efforts were at first uncoordinated. But it soon became evident that their functions are interdependent. They are correlative elements of a personnel system. But though this fact was recognized before the war ended, the three had not been united when the armistice was signed.

The men assigned to these agencies were mostly civilian psychologists, educators, or employment managers who were temporarily in the military service. When the war ended they quickly returned to their civilian occupations, each

carrying with him basic elements of a sound personnel system but no one having a well-coordinated whole. As a result we emerged from the war with a series of uncoordinated portions of a personnel system which, if coordinated in a single coherent procedure, would be of fundamental value for all agencies involved in handling and organizing men.

Realizing that significant new personnel methods had been developed in the army during the war, the War Department immediately began to work over the war reports and to develop a coherent system for future use. It soon became evident that job specifications are fundamental to all phases of personnel work. Therefore, one of the first things done was to develop a series of job specifications and a standard terminology for the various types of technicians required in the Army. This was completed in 1923 and published as Document 1121 of the Adjutant General's Office under the title "Minimum Specifications and Index for Occupational Specialists." The army also made extensive experiments, based on the analysis of job specifications and designed to perfect the new techniques of training and of selecting and placing men. An account of this work was published as Supplement No. 1 of the EDUCATIONAL RECORD, April, 1926, under the title "Education in the Army." Twenty-eight manuals of instruction with appropriate standardized tests were developed by the job analysis method and were published for use in the service.

While this work of salvaging war experience in the personnel field was progressing in the Army, a number of the psychologists, educators and employment managers who had participated in the war work began to cast about to find some way in which their war experiences could be turned to account in civilian business and education. As a first step toward concerted action in this direction, the American Council on Education called an informal conference to consider the problem early in 1922. This group formulated a program for a national conference on the subject and recommended that the President of the United States be requested to issue the call for such a conference.

The request was made, but since it did not seem wise for the President to call such a national conference at that time, the proposal was presented to the Secretary of War and resulted in the Conference on Training for Citizenship and National Defense called by him in November, 1922. A special report of this conference was published by the War Department early in 1923.

Job specifications and occupational terminology were important topics in that conference. It again became clear, first, that job specifications that state precisely what must be done on each job are essential to development of tests for selection and the organization of effective training programs; and, second, that the first step toward standard terminology is comparable specifications. This requires that all concerned write their specifications in approximately the same form. Therefore, the War Department invited the American Telephone and Telegraph Company to cooperate in the development of a typical form that would meet as far as practicable all the requirements of industry, of education, and of mobilization. After two years of study and experiment, in which the American Council on Education cooperated as the representative of the schools, the tentative form presented in this monograph was developed. The War Department has approved this as satisfactory for its purpose. The Telephone Company is trying out the practical application of job-specifications to the telephone industry and has consented to the publication of these preliminary and tentative samples of job specifications as a basis for cooperative experiments among a wide variety of occupations and directed both toward further improvement of form and toward evolution of standard terminology.

In studying the job specifications presented in the following pages, careful distinction must be made between form and content. All are written in the same form. This form has been found to meet adequately all the requirements. It will unquestionably be improved by further use. But the content of any one of these specifications does not correctly describe the work done under the corresponding title in all companies. If all who are writing job specifica-

tions will write them in a form like that here presented, they will not only secure satisfactory results for their own purposes, but they will help assemble the basic data needed for a comparative study of content looking toward clarification of occupational terminology and more vital work in schools.

The project initiated by the American Council on Education in 1922 for salvaging war experiences has now been developed by it into a clearly defined cooperative experiment between business and education. The purpose is to evolve a coherent personnel procedure that helps men and women find the work they can do best. Job specifications of the type here presented are important instruments in making the experiment. By their use business, industry and the professions can depict the world's work in a manner that helps themselves and also makes it possible for schools to do a better job. The other half of the experiment consists in developing record cards, tests of achievement and other similar instruments by which schools may help themselves and also depict the achievements and tastes of students in a manner that will guide them to appropriate life occupations. Industries profit from this work by reduced costs of breaking in and of turnover. This second half of the experiment is also under way; but that is another story.

The Chamber of Commerce of the United States is co-operating with the Council in this experiment. The Committee on Education of the Chamber has adopted the plan of working with local Chambers in a few communities to make local business firms and local schools mutually more helpful by the process of exchange of reliable information as just described. When the details of operation have been worked out in a few cases, other communities will be encouraged to similar action.

In addition to practical values in administration, the writing of job specifications may have large educational value in industry. For the various jobs in any plant are defined and assigned by management. Often workers do not understand the full scope of their work and of its relation to the whole enterprise. The experience of writing for

himself a description of his own job in the form of a job specification is then very useful to the worker. To do this, he must study his job and clarify his objectives. He begins to think consecutively about the things he daily does, sees, and handles and this stimulates interest in work and personal growth. Such descriptions of work written by employees are reviewed by management. This process of collecting the essential details required is also much more satisfactory and less costly than the process of having one man write all the specifications for a group.

The application of job specifications to education has not yet been developed as fully as has their application to industrial organization and management. Their application and value to technical training in industry are obvious and immediate. The job specification tells what the skilled worker does and instruction is then organized to train apprentices to do the things specified. Such training is, however, highly specialized, and it is universally agreed that too early specialization is fatal to wise vocational choice and to maximum liberation of the latent powers of children. Methods of dealing with job specifications for purposes of general education are discussed in the last section of this monograph.

The cooperative experiments just described furnish one real avenue of approach to a better mutual understanding between business and education. If industry, business, and the professions will supply properly written job specifications for all phases of the world's work, and if the schools will conscientiously try to use such specifications wisely in developing citizens who know how to take hold in life, tangible results of schooling will soon appear. And when parents see their children really growing in mastery and employers find that young people fresh from school know how to take hold of the world's work, all question of costs of education will vanish. Americans know good goods when they see them and are willing to pay the necessary costs of producing them.

In 1918 the Joint Committee on Engineering Education finished its report. This was published as Bulletin 11 of the Carnegie Foundation for the Advancement of Teaching.

under the title, A Study of Engineering Education. That report contains a paradox. It states that over 7,000 professional engineers voted by 95% majority that personal character has greater weight in determining engineering success than does mastery of the science and technique of engineering. That professional judgment has been widely acclaimed as sound. But since schools devote practically all their time to instruction in science and technique, it was not then apparent how this professional judgment helps schools do a better job.

Nine years have passed. The experiences of these years are showing ever more clearly that the procedures herein presented offer one practical method of resolving that paradox. For when training programs are intelligently organized on the basis of job specifications and their intelligent analysis, they foster the growth of sound morality while developing technical proficiency. Those who doubt this statement are invited to put it to the acid test of experiment. Young America is demoralized by the current system of time service for credits. Challenge them with real missions. Place responsibility for achievement on them. Then watch them grow strong and upright through the discipline that comes from overcoming the difficulties inherent in all worthwhile work.

Job Specifications

JOB specifications were first used in industry as aids to management in selecting employees, in determining relative proficiency and in standardizing terminology. Gradually their broader uses in personnel work and in educational procedure are becoming apparent. As the scope of their usefulness expands the form in which they are written changes. At present the form that seems best adapted to the requirements of industry, of terminology and of education is the one illustrated in the first sample below describing the elementary job of a cable splicer's helper in the telephone industry.

It will be noted that the specification proper is preceded by a brief statement defining the general nature and location of the work. This is convenient for classification purposes and for constructing occupational codes.

The statements describing the work itself are called "Objectives." This places the job before the worker as a challenge to achievement. Each item in the specification describes a specific task requiring action. The result to be accomplished is so obvious that the worker can soon tell for himself whether he is doing the specified acts well or ill. No reference is made to personal or emotional traits. Experience has shown that mention of these confuses the specification. If a man does a job well, he has the necessary technical qualifications. Personal peculiarities may disqualify him for working harmoniously in a particular group, but this question should be treated as a distinct problem. Hence personal traits are out of place in job specifications.

SPLICERS' HELPER

Does the simpler forms of work necessary on cable splicing jobs.
Located in city area—construction force.

Objectives

Apply, when necessary, any knowledge or experience gained prior to entrance as a new employee.

Develop proficiency in work of each of the following grades as a requirement for advancement to each succeeding grade.

Grade D

- Keep immediate locality of work clean and orderly.
- Do any simple work which splicer may order.
- Test and climb telephone poles.
- Place splicer's platform and erect wind shield in aerial position.
- Remove and replace manhole covers.
- Test manholes for gas.
- Clear manhole of water with hand pump.
- Set up and maintain the safety devices prescribed for cable work.
- Give warning signals to highway traffic at open manholes.
- Anticipate need for tools and materials and pass them to splicer when needed.
- Care for splicer's tools, materials and cart.
- Load and unload reels.
- Render prescribed first aid treatment in emergencies.
- Follow accident prevention practices approved for splicing work.
- Comply with Company regulations as to hours, conduct, etc.

The splicers' helper, Grade D, is the least skilled man in that work. He is, however, in line for promotion if he grows. Therefore, the job specification for splicers' helper continues:

Grade C

- Perform Grade D work when necessary.
- Hook up and adjust tone set for use.
- Apply tone in making tests for count and insulation of pairs.
- Prepare hot paraffin and molten solder for use.
- Boil, cut and punch cotton tubing.
- Cut, shape, clean and split a lead sleeve.
- Seal cable ducts at entrance to manhole.
- Cap and pack iron pipe ducts.
- Stamp cable tags and place on cables.
- Clean and stencil cable terminals.
- Mount pole steps.

Grade B

- Perform Grade C work when necessary.
- Test and replace protector carbons and heat coils.
- Ride aerial messenger and work in suspended position.
- Strip and remove lead sheath from cables up to 200 pair without injury to core.
- Boil conductors in paraffin.

Grade A

- Perform Grade B work when necessary.
- Separate wires and make insulation tests.

Test wires for count of pairs.

Board wires.

Lap and mark corresponding wires from each cable end.

Slip sleeves on and skin insulation of each wire preparatory to twist.

Make twisted, wrapped and soldered or soldered sleeve joints in wires.

Wrap entire bulk of spliced wires with muslin tape.

Study and practice on the training subjects recommended for this assignment, as an aid to self-improvement.

Develop proficiency in all grades of this work as a requirement for advancement to Third Class Splicer.

This process of classifying jobs in a series of increasing difficulty but in a given line of work may for convenience be called *pyramiding*. Such a pyramid of job specifications points out to the worker a direct line of advance. It indicates to him where he must improve if he is to win promotion. Hence, it stimulates ambitious men to self-improvement and shows them specifically how to go about it.

In addition to the line of progress indicated by the objectives of the job, many specifications end with the item "Study and practice on the training subjects recommended for this assignment as an aid to self improvement." The company supplies this material to those who ask for it. This supplies an effective criterion by which men sort themselves for promotion and growth.

In the telephone work the splicer group is a long one. But it is so admirable an example of pyramiding that it is here used as an illustration.

THIRD CLASS SPLICER

Does straight or single tap splicing of local cables and makes wire forms.

Located in city area—construction force.

Objectives

Perform, when necessary, any form of work done while a Splicers' Helper.

Develop proficiency in work of each of the following grades as a requirement for advancement to each succeeding grade.

Grade B

Direct and coach a Splicers' Helper in his work.

Bend cables to point of splice without kink or injury.

Slip lead sleeve, beat in ends, pour lead and wipe a straight or "Y" joint on the smaller cables.

Dress cables after completion of splice.
Wipe bonding ribbon or ground wire to cable sheath.
Pour hot compound in making pot heads or insulation splices.
Hang completed cable splice and projecting cable in place.
Place wire ties, hang messenger rings and mount cable clamps.
Make and place a drip flange on a cable terminal.
Mount the smaller cable terminals on walls, poles, etc.
Form and stitch the smaller sizes of cables preparatory to terminating them.
Connect or solder the smaller cables to protectors or terminals.
Make out time and material reports for self and helper.
Inspect new work and repair defects before leaving job.
Protect unfinished splice overnight.

Grade A

Perform Grade B work when necessary.
Make a complete straight or single tap splice on any size of local cable, aerial or underground.
Arrange cable racks and hangers in manhole walls.
Mount the larger cable terminals in all locations.
Form and stitch the larger sizes of cables preparatory to terminating them.
Connect or solder the larger cables to protectors or terminals.
Mount, shellac and tape forms at distributing frames.
Clear all cable and terminal troubles in aerial, block or house, locations with minimum interference to service.
Clear manholes of water with motor pump.
Study and practice on the training subjects recommended for this assignment, as an aid to self improvement.
Develop proficiency in all grades of this work as a requirement for advancement to one of the following:
 Second Class Splicer.
 Junior Cable Testman.

SECOND CLASS SPLICER

Does multiple splicing of, makes transfers in, and clears all forms of trouble on local cables.

Located in city area—construction force.

Objectives

Perform, when necessary, any form of work done while a Third Class Splicer.
Develop proficiency in work of each of the following grades as a requirement for advancement to each succeeding grade.

Grade B

Make a complete multiple splice on the smaller sizes of cables.
Establish talking wires and spare pairs in cables.

Do all wire, lead and testing work required to make a simple transfer in the smaller cables.

Place or remove cable incident to a transfer or sectional throw.

Make air test on a finished splice, with aid of air pump.

Clear sheath and terminal troubles on underground cables.

Locate and clear protector troubles.

Run cross connections.

Grade A

Perform Grade B work when necessary.

Read and follow a schematic drawing of a cable lay-out.

Make any kind of multiple splice on small or large cables.

Make simple transfer splices on the larger sizes of cables.

Clear all external and internal troubles in any local cable aerial or underground.

Operate a Wheatstone Bridge and aid Cable Testman in making capacity unbalance tests.

Detect location of cable trouble with wireless test set.

Make insulating joints in cable or strand.

Study and practice on the training subjects recommended for this assignment, as an aid to self-improvement.

Develop proficiency in all grades of this work as a requirement for advancement to First Class Splicer.

FIRST CLASS SPLICER

Does splicing of toll and composite cables and conducts sectional throws of local cables.

Located in city area—construction force.

Objectives

Perform, when necessary, any form of work done while a Second Class Splicer.

Develop proficiency in work of each of the following grades as a requirement for advancement to each succeeding grade.

Grade B

Interpret any cable plan without supervision.

Make a complex transfer under exacting service or working conditions.

Make a complete cable throw splice of any size on local cables.

Make a complete splice on a quadded non-composite toll cable.

Detect and clear trouble on non-composite toll cables.

Grade A

Perform Grade B work when necessary.

Direct the work of another splicer in making the distant splice of a cable throw on local cables.

Lay out route of cables and location of splices in manholes.

Do any splicing job required in cutting over a new central office.

Maintain and repair manhole lighting sets.

- Make complete splices on composite toll cables of all kinds.
- Locate and clear trouble in composite toll cables.
- Study and practice on the training subjects recommended for this assignment, as an aid to self-improvement.
- Develop proficiency in all grades of this work as a requirement for advancement to Senior Splicer.

It will be noted that a worker may advance up to the grade of Splicer, First Class, on account of progressive growth in technical skill alone. The next following grades, Senior Splicers, require, in addition to technical skill, some supervision over the work of others and some responsibility for planning.

SENIOR SPLICER

- Does splicing of submarine cables and engages in the more complex and difficult splicing work on local and toll cables.
- Located in city area—construction force.

Objectives

- Perform, when necessary, any form of work done while a First Class Splicer.
- Develop proficiency in work of each of the following grades as a requirement for advancement to each succeeding grade.

Grade E

- Proceed with splicing work on any local or toll cable without direct instructions.
- Splice wires, armor and reinforcement of a submarine cable.
- Terminate submarine cable at sealed chamber terminal.
- Clear trouble in submarine cables.
- Install ground leads, pipes and buried plates.

Grade D

- Perform Grade E work when necessary.
- Determine proper location of insulating joints.
- Decide on proper run for ground leads.
- Plan the location of loading coil cases in manholes and on poles.
- Design routing of stub cables and location of splices to main cables.
- Decide on necessity for and position of an intermediate stub cable.

Grade C

- Perform Grade D work when necessary.
- Make final inspection of finished work as to workmanship, installation, standards, protection, specifications, etc.

Grade B

- Perform Grade C work when necessary.
- Explain and demonstrate any splicing operation to workers.

Coach men in the development of skill.

Instruct men in elementary theory, safety practices, first aid treatment, working regulations, etc.

Grade A

Perform Grade B work when necessary.

Order the required materials and tools necessary for larger jobs.

Supervise distribution of materials and tools when delivered.

Direct the work of a small group of splicers and helpers.

Study and practice on the training subjects recommended for this assignment as an aid to self-improvement.

Develop proficiency in all grades of this work as a requirement for advancement to one of the following:

Splicers' Foreman.

Shop Splicers' Foreman.

In the following specification for Splicer's Foreman, the objectives of the job have changed completely from technical production to planning work and supervising men. Therefore, promotion of those who, however skillful they may be, prove unable to plan and supervise is limited by this fact.

SPLICERS' FOREMAN

Supervises the work of crews engaged in any kind of splicing.

Located in city area—construction force.

Objectives

Perform, when necessary, any work done while a Senior Splicer.

Lay out work to be done by each splicing crew.

Assign proper grade of splicer and helper to each crew.

Transport men and materials to locality of work.

Give direct instructions to individual employees in the performance of their work.

Maintain a high degree of morale in the working crews.

Obtain maximum production under normal conditions.

Obtain effective results in emergency work.

Discuss intelligently, with the workmen, any problems which may arise concerning Company regulations, compensation, hours, conduct, working conditions, etc.

Enforce safety and working regulations.

Make an intelligible report on any angle of splicing work, men or materials.

Read and study on the training subjects recommended for this assignment, as an aid to self improvement.

Develop proficiency in this work as a requirement for advancement to District Splicers' Foreman.

SHOP SPLICERS' FOREMAN

Supervises the work of the shop splicing force and does all lead work.
Located in city area—construction force.

Objectives

- Perform, when necessary, any work done while a Senior Splicer.
- Slip lead sleeve, beat in ends, pour in lead and wipe a straight, "Y" or multiple joint on the smaller and medium sized cables.
- Dress cables after completion of splice.
- Correctly interpret diagrams and instructions (written or verbal).
- Recognize the relative importance of the different jobs in the shop and schedule them accordingly.
- Distribute jobs to each workman in keeping with his capabilities.
- Give direct instructions to individual employees in the performance of their work.
- Explain and demonstrate the operations of shop splicing and coach men in the development of skill.
- Instruct men in elementary theory, safety practices, first aid treatment, fire prevention and working regulations, etc.
- Obtain maximum production under normal conditions.
- Obtain effective results in emergency work.
- Inspect and pass on quality of work done.
- Supervise shop conditions as to cleanliness, habitableness and upkeep of equipment.
- Enforce fire protection and safety regulations.
- Make out time and material reports for self and each shop workman according to approved methods.
- Make an intelligible report on any angle of shop splicing work, men or materials.
- Maintain a high degree of morale in shop force.
- Discuss intelligently, with the workmen, any problem which may arise concerning Company regulations, compensation, hours, conduct, working conditions, etc.
- Read and study on the training subjects recommended for this assignment as an aid to self improvement.
- Develop proficiency in all grades of this work as a requirement for advancement to District Splicers' Foreman.

DISTRICT SPLICERS' FOREMAN

Generally supervises all cable splicing activities within a given geographic district.
Located in city area—construction force.

Objectives

- Perform, when necessary, any work done while one of the following:
 - Shop Splicers' Foreman.
 - District Splicers' Foreman.

- Correctly interpret general instructions of superintendent.
- Give fundamental information and instruction to foremen when passing orders to them.
- Shift splicing crews and foremen in order to obtain most efficient and effective results.
- Discuss with men of higher rank the volume of work versus force requirements.
- Judge men on their merits and intelligently recommend them when qualified for promotion.
- Co-operate with other District Foremen in charge of work directly or closely associated with splicing.
- Make full and intelligible reports on progress of work in local district.
- Read and study on the training subjects recommended for this assignment, as an aid to self improvement.
- Prepare, by diligent application in this assignment, for selection to advance into a broader and more important field of work.

The foregoing pyramid of splicers is but one of many similar series of jobs of progressively increasing difficulty and responsibility. The application of the idea in a different field is illustrated by the following sample pyramid from the Commercial Department of a telephone company:

STUB CLERK

Does all bill stub work in connection with subscribers' payments by MAIL.

Located in city area—business office of multiple unit type.

Objectives

- Apply, when necessary, any knowledge or experience gained prior to entrance as a new employee.
- Keep desk and papers in order.
- Do any simple clerical work which the person in charge may direct.
- Open, verify, sort and distribute mail.
- Prepare adding machine totals of checks and bill stubs, for balancing.
- Endorse checks with hand stamp preparatory to depositing.
- File stubs in numerical order.
- Compare treatment stub file with current bill stubs and withdraw corresponding stubs for crediting.
- Cancel bill stubs with hand machine.
- Receipt subscribers' bills with hand stamp.
- Mail receipted bills to subscribers requesting them.
- Give verbal report immediately upon receipt of payments from subscribers whose service has been denied.
- Answer telephone in a courteous manner and give prompt attention to any requests thus made.
- Comply with Company regulations as to hours, conduct, etc.

Read and study on the training subjects recommended for this assignment, as an aid to self improvement.

Develop proficiency in this work as a requirement for advancement to Collection Clerk.

COLLECTION CLERK

Handles telephone inquiries pertaining to collections. Also does the detail work involved in the collection treatment of amounts.

Located in city area—business office of multiple unit type.

Objectives

Perform, when necessary, any form of work done while a Stub Clerk.

Discuss collection disputes with subscribers by telephone.

Prepare credit memoranda covering adjustments or allowances.

Initiate and follow up toll inquiries to distant points.

Investigate and report on toll inquiries from distant points.

Prepare treatment notices and supervise the details of mailing them.

Give notice to subscribers by telephone prior to denial of service.

Make, check and forward service denial lists.

Order the restoration of service promptly, when settlement of account has been made by subscriber.

Investigate causes for returned mail and adjust accordingly.

Assemble and file final account data.

Establish and maintain final account ticket file.

Arrange for personal collection treatment of overdue final accounts.

Prepare proper forms for use in bankruptcy, estate, suit or other legal proceedings as directed.

Set up monthly recommendations covering the writing off of non-collectible accounts.

Read and study on the training subjects recommended for this assignment, as an aid to self-improvement.

Develop proficiency in this work as a requirement for advancement to Senior Collection Clerk.

SENIOR COLLECTION CLERK

Handles collection inquiries received by MAIL. Also generally supervises the details of the collection work.

Located in city area—business office of multiple unit type.

Objectives

Perform, when necessary, any form of work done while a Collection Clerk.

Direct subordinate employees in the conduct of their work.

Decide on the nature of the replies to be made to collection inquiries received by mail.

Dictate correspondence, etc., to stenographer.

Originate "charge hacks" to Telegraph Companies.

Authorize extension of credit when justified by circumstances.

Verify the service denial lists before service is denied.

Review and verify service denial lists daily.

- Issue disconnection orders when prescribed conditions develop.
- Read and study on the training subjects recommended for this assignment, as an aid to self improvement.
- Prepare, by diligent application in this assignment, for selection to advance into a broader or more important field of work.

TELLER

Receives cash payments made in person. Also prepares reports covering moneys received.

Located in city area—business office of multiple unit type.

Objectives

- Apply, when necessary, any knowledge or experience gained prior to entrance as a new employee.
- Do any clerical work which the person in charge may direct.
- Keep counter and papers in order.
- Receive cash from individuals making payment in person.
- Detect spurious moneys.
- Operate a change machine.
- Receipt subscribers' bills and stubs with hand stamp.
- Sort bill stubs and moneys.
- Prepare adding machine totals of all payments and bill stubs, for balancing.
- Prepare daily record of total payments, subdivided as between central office districts.
- Comply with Company regulations as to hours, conduct, etc.
- Read and study on the training subjects recommended for this assignment, as an aid to self improvement.
- Develop proficiency in this work as a requirement for advancement to Cashier.

CASHIER

Generally supervises the work involved in the receiving of cash payments. Also handles the petty cash of the Business Office.

Located in city area—business office of the multiple unit type.

Objectives

- Perform, when necessary, any form of work done while a Teller.
- Direct and supervise subordinate employees in the conduct of their work.
- Inspect funds prepared for deposit and make out deposit slip.
- Prepare daily cash summary report.
- Maintain memoranda record showing special distribution of receipts.
- Write detailed reports covering checks not honored by the bank.
- Prepare semi-monthly report of accounts to be recharged.
- Make petty cash payments in cash or by check.
- Audit vouchers and bills before paying.
- Keep stub record of checks drawn.
- Prepare forms covering claims for reimbursement.

- Prepare forms showing analysis of disbursements by accounts.
- Keep working advance fund in balance.
- Read and study on the training subjects recommended for this assignment, as an aid to self improvement.
- Prepare, by diligent application in this assignment, for selection to advance into a broader or more important field of work.

OUTSIDE MAN

- Collects outstanding payments through personal visits to patrons.
- Also canvasses new business in same way.
- Located in city area—business office of the multiple unit type.

Objectives

- Apply, when necessary, any knowledge or experience gained in prior telephone work or elsewhere.
- Visit patrons at their residence or place of business.
- Endeavor to secure through verbal effort the payment of accounts rendered.
- Authorize minor adjustments when justified by circumstances.
- Receipt subscriber's bills in recognition of payments received.
- Prepare individual forms covering payments collected and turned in.
- Prepare report on probability of later collection, in unsuccessful cases.
- Secure new subscriptions for telephone service through verbal effort.
- Prepare service record cards covering new subscriptions.
- Perform miscellaneous office duties assigned by superior.
- Read and study on the training subjects recommended for this assignment, as an aid to self improvement.
- Prepare, by diligent application in this assignment, for selection to advance into a broader or more important field of work.

The value of job specifications is fully recognized for all forms of manual work. It is easy to see that they are useful in organizing shops and in training mechanics to greater skill and output. Many, however, still doubt their applicability to professional work. The following samples from the Engineering Department of a Telephone Company describe some of the jobs college graduates begin with. To these are added General Counsel, Comptroller, Treasurer, Statistician, General Auditor, Purchasing Agent, Advertising Manager, and Industrial Traffic Manager, compiled from data from several other companies. It is hoped that these will be sufficient to demonstrate the essential points of a carefully developed form and indicate that it is of no less value in studying the most complex professional work and in selecting and training men for these higher positions.

EQUIPMENT JOB ORDER MAN

Prepare job orders for minor additions to and changes in central office equipment and large private branch exchanges.

Located in Equipment Plans force.

Objectives

Apply, when necessary, any knowledge or experience gained prior to entrance as a new employee.

Gather information in sketch and note form, from existing installations, or from records, for use in formulating plans.

Determine how any special construction and maintenance features of job are to be met.

Select the standard circuits and equipment best suited to the job.

Determine if there is need for special circuits or equipment.

Decide on proper arrangement of equipment on floor, switchboard, frames, racks, etc.

Conclude on best method of cabling and wiring.

Confer with superior on tentative plans for obtaining suggestions on his preliminary approval of them.

Direct draftsman in making working sketches and drawings of equipment, floor plans, cabling and circuits layouts.

Prepare lists of apparatus, cabling, circuits, drawings, etc., for job.

Estimate construction, removing, rearrangement, depreciation and salvage costs.

Prepare lists job orders according to approved practices.

Edit requisitions for equipment needed.

Write letters covering subsequent modification of plans.

Answer questions of manufacturer or installer regarding proposed changes.

Cooperate with those engaged on power plans, if job has any power features.

Comply with Company regulations, as to hours, conduct, etc.

Read and study on the training subjects recommended for this assignment, as an aid to self improvement.

Develop proficiency in this work as a requirement for advancement to Specification Man.

EQUIPMENT SPECIFICATION MAN

Prepares specifications for new or extensive modifications of central office equipment and large private branch exchange.

Located in Equipment Plans force.

Objectives

Perform, when necessary, any form of work done while a Job Order Man, but applied to major projects.

Prepare specifications (skeleton or detailed) according to approved practices.

Read and study on the training subjects recommended for this assignment, as an aid to self-improvement.

Develop proficiency in this work as a requirement for advancement to Equipment Plans Checker.

EQUIPMENT PLANS CHECKER

Checks all job orders and specifications for new or modifications of central office equipment and large private branch exchanges.

Located in Equipment Plans force.

Objectives

Perform, when necessary, any form of work done while a Specification Man.

Examine finished job orders, specifications, sketches, drawing lists, requisitions, letters, etc., both as to form and content.

Check important computations wherever they appear.

Observe if approved form, phraseology and terminology has been used.

Note whether special points have been clearly expressed.

Be sure that the provisions of all plans are sound from construction and maintenance standpoint.

Determine if all papers involved are properly co-ordinated.

Point out discrepancies to men who prepared plans and supervise the corrections.

Make certain that job has been completely covered from all angles.

Coach inexperienced men in their work.

Read and study on the training subjects recommended for this assignment, as an aid to self improvement.

Develop proficiency in this work as a requirement for advancement to Equipment Plans Supervisor.

EQUIPMENT PLANS SUPERVISOR

Supervises the work of preparing all plans for new or modifications of central office equipment and large private branch exchanges.

Located in Equipment Plans force.

Objectives

Perform, when necessary, any form of work done while an Equipment Plans Checker.

Interpret correctly general instructions of immediate superior.

Take note of Traffic, Plant and other recommendations officially made for new and additional equipment.

Assign official recommendations to proper members of force for attention.

Give individual instructions to and aid men in the development and completion of their plans.

Attend schedule conferences and see that jobs are satisfactorily placed on manufacturing and installing schedules.

See that plans are completed and issued in accordance with schedule.

Obtain maximum production from force under normal and emergency conditions.

Maintain a high degree of morale among employees of force.

Discuss intelligently with employees any problem which may arise concerning Company regulations, compensation, conduct, etc.

Co-operate with others engaged in similar and closely associated work.

Explain and confer on engineering features of proposed and current jobs when called upon.

Read and study on the training subjects recommended for this assignment, as an aid to self improvement.

Prepare, by diligent application in this assignment, for selection to advance into a broader or more important field of work.

PRELIMINARY PLANS MAN

Lays out preliminary floor plans for new or modifications of central office equipment and large private branch exchanges.

Located in Equipment Plans force.

Objectives

Apply, when necessary, any knowledge or experience gained in previous telephone work or elsewhere.

Plan several different combinations of floor plan lay-outs by use of templates.

Give due consideration to provision for and growth of cable runs, weight of apparatus, height of equipment, ventilation, lighting, etc.

Direct draftsman in making scaled drawings of preliminary plans.

Confer with superior on tentative plans for obtaining suggestions or his preliminary approval of them.

Consult those engaged on building plans as to practicability of preliminary plans from standpoint of building construction.

Assist in checking initial floor plans submitted by Architect, in order to ascertain whether equipment features of preliminary plans have been substantially preserved.

Read and study on the training subjects recommended for this assignment, as an aid to self-improvement.

Prepare, by diligent application in this assignment, for selection to advance into a broader or more important field of work.

This concludes the illustrations of job specifications selected from the experimental work in the telephone field. The following samples have been compiled by the Council from other sources. Hence, they do not necessarily completely reflect the work in any individual company.

GENERAL COUNSEL

Directs all activities for which the Legal Department is responsible.

Located in legal force.

Objectives

- Apply, when necessary, any knowledge or experience gained in previous positions held.
- Cooperate and counsel with department heads in company on all legal matters.
- Confer with company officials or with public officials on questions of legal importance.
- Prepare and file applications, pleadings and other formal papers in cases before courts or regulatory bodies.
- Study company interests and prepare arguments for use in legal proceedings involving rates, accidents, damages, property rights, etc.
- Discuss with witnesses the testimony to be offered by them in company's behalf.
- Direct and, if necessary, take part in examination of witnesses, arguments, etc., at public hearings.
- Examine and draw pertinent information from departmental reports, records, etc.
- Speak before company or public gatherings.
- Keep posted on the more important current developments in legal, political, industrial, financial, etc., fields.
- Interview and select capable employees for legal force.
- Give fundamental information and instructions to legal force in assigning problems, investigations, duties, etc.
- Supervise work of legal force and consult with employees in the solution of legal problems.
- Review all complaints filed with local regulatory bodies against company.
- Refer and letter complaints to proper department for attention and subsequently report company action to regulatory bodies.
- Consider and approve form of legal documents prepared in various departments.
- Supervise the assessment and payment of all company taxes.
- Review all papers concerning suits, actions, etc., referred to Legal Department for advice or attention.

COMPTROLLER

Objectives

- Prepare such financial statistics and reports of the company's operations as may be required and has authority to require from all departments and houses such information as may be necessary to prepare such statistics and reports.
- Take charge of the accounting methods of the company in all departments and at all houses.
- Audit all accounts of the company.
- Represent the company in its relations with public accountants selected to certify to any published reports.

- Prepare financial forecasts for use in determining the company's financial policy.
- Obtain estimates from the general departments for the succeeding year.
- Prepare budgets for the departments and for the company.
- Place insurance in such amounts and in such a manner as may be determined to be the company's established policy.
- Approve all data on taxes and other statistical reports submitted to the general counsel before filing with public authorities.
- Approve all purchase and sales contracts which are on a cost-plus basis.
- Prepare and issue general instructions sent out under the authority of the president or vice-president.
- Obtain recommendations from the various general departments as to changes in employees' rates of pay and submit summaries to the president and board of directors for their consideration and approval.
- Advise on accounting personnel in all departments and at all locations.
- Assign work to the following departments:
 - Accounting Department.
 - General Statistical Department.
- Approve all extra compensation plans.
- Certify to the amount earned by employees under compensations plans.

TREASURER

Objectives

- Give receipts for all vouchers in favor of the company.
- Disburse in settlement of all invoices or orders which have received proper approval.
- Take receipts or vouchers for them.
- File and preserve a record of all expenditures.
- Deposit cash receipts and borrowed funds.
- Set up and maintain petty cash funds.
- Be responsible for the transfer of funds to the company's depositories.
- Invest surplus cash.
- Take custody of bonds and certificates, promissory notes and other negotiable instruments, contracts, leases, deeds, insurance policies, tax reports, copyrights and patents.
- Endorse all negotiable instruments.
- Sign all bonds and certificates of stock.
- Bond employees to whom delegates authority.
- Act in respect to the company's stock issues and transfers where the company acts as its own registrar.
- Make out report to the board of directors as to cash position.
- Take charge of credits and collections.
- Prepare and submit an efficiency statement of the treasurer's office to the proper officials.

Supply company with all the cash it requires both for current matters and for capital expenditures.

Maintain cash budget.

STATISTICIAN

Objectives

Take charge of the general statistical studies of the company.

Analyze and correlate statistics regarding all phases of the business and present these statistics in graphic or summarized form to the executives.

Review all reports being issued and prepare graphic charts for as much of the data as possible, so that the executives can detect important trends of the business accurately and easily.

Suggest the compilation of additional information considered necessary and eliminations of any reports and statistics considered unnecessary.

Cooperate with other departments in such of their studies as are based in part on the statistical records in his office.

Advise officials of the company on the general business condition of this country and other countries.

Keep in contact with state and national agencies, furnishing statistical information.

Make studies of statistics of the company and its subsidiary companies.

Make forecasts and recommendations as a result of these studies to the end that the company may act intelligently and quickly in increasing or decreasing commitments in order to anticipate the expected increase or decrease in sales to customers.

Advise the accountants and statisticians in the various departments of the company and the officials of the subsidiary companies assigned to this work, so that they may at all times be informed as to the trend of affairs with particular reference to the reaction of the trend on their own business.

Make such financial studies as may be necessary to advise as to the probable cause of interest rates.

Advise other departments of the company where statistical studies are being made.

Maintain a general library and a key index to information available within the company.

Maintain files of all sufficiently important statistical reports and analyses prepared by the various departments of the company.

Make studies of foreign exchange conditions in this and other countries to the end that intelligent action may be taken on the transmission of funds from one country to another country.

GENERAL AUDITOR

Objectives

Take charge and be responsible for the work of the Auditing Department.

- Submit all reports to the president.
- Prescribe the rules and conditions under which payments are authorized in all departments of the company, subject to the approval of the president.
- Audit the accounts of the financial officers of the company, and those of other employees who are entrusted with company funds.
- Audit the accounts of the treasurers of subsidiary companies.
- Audit the transactions in fine metals and minerals.
- Determine that surety bonds have been secured for employees as prescribed by the treasurer.
- Check commitments and disbursements applying on specific plant appropriations granted by the board of directors.
- Certify to the correctness of reports covering such specific plant appropriations before they are presented to the board of directors.
- Audit the journal entries of all departments of the company.
- Audit other records and accounts in all departments of the company, either completely or by test check.
- Consult with the European comptroller and officials of allied companies as to auditing methods and routine to be followed in the foreign associated and allied companies.

PURCHASING AGENT

Objectives

- Prepare intelligible specifications covering the quality of material to be purchased and provide the means for checking deliveries against these specifications.
- Buy all materials and service required for the company, and be responsible for these until they are delivered to the consuming department.
- Obtain the best possible cash discount for the prompt payment of vendors' invoices.
- Compare the various items appearing on the invoice with the purchase order to see that the former is correct.
- Cooperate with the Industrial Traffic Department so that shipments may be properly routed and delivered when and where required.
- Study business conditions and markets.
- Investigate new materials and equipment.
- Establish relations with supplies and investigate possible new sources of supplies.
- Keep a record of quotations.
- Keep an adequate record of purchases in files which are readily accessible. (These records should be comprehensive with respect to nature of material purchases, quantities bought, from whom purchased and price paid.)
- Make a complete audit of invoices with respect to prices, terms, footings and extensions and prepare invoices for prompt payment.

- Maintain a complete file of catalogues of material pertaining to the business with which the Purchasing Agent is associated. (These files should be revised from time to time to bring them up to date.)
- Dispose of obsolete material and equipment.
- Keep the raw material inventory at the lowest possible figure consistent with business and market conditions.
- Keep in touch with the general activities of the company and tax service departments.
- Interview salesmen who call personally and put them in touch with the technical men of the organization.
- Study sales literature received.
- File claims.
- Interest self in the company's personnel by assisting them in personal purchases and procuring special discounts for them.
- Secure such claims as are necessary as the result of the receipt of goods damaged in transit.
- Inform all department heads of any developments of materials, devices, equipment, prices, etc.
- Cooperate with the production department by having sufficient materials on hand to meet its schedule and by having material available to take care of any of the changes in schedule.
- Cooperate with the engineering department by adhering strictly to their specifications, advising them of similar materials or equipment at lower costs or better delivery, and by securing their approval before any change is made in specifications.
- Cooperate with the inspection department by ordering the best material consistent with price and service, and by carefully heeding their complaints and informing them of any changes of materials and giving reasons for same.

ADVERTISING MANAGER

Objectives

- Prepare and present plans for the advertising activities of the company, correlating all such plans very definitely with the program in sales development as laid down by the sales organization.
- Supervise the execution of these plans as carried out either by:
 - a. The personnel of the advertising department.
 - b. The advertising agencies or agency which the company employs.
- Supervise the preparation of art work required in advertising and printing matter.
- Serve as contact officer with the advertising agency.
- Supervise correspondence, particularly with consumers, relating to the company's advertising.
- Supervise distribution of advertising material throughout company, being sure that executives are not bothered with unimportant publications.
- Receive solicitations of proposed advertising plans media and determine their relations to the requirements of the sales plan.

- Help determine the sales program to adequately apply the costs of advertising to accomplish the desired sales objectives.
- Make the necessary contacts with all parts of the business or with trade in developing its part of the work.
- Coordinate such relations with the activities in the department as such.
- Take charge of the various publicity efforts of the company not placed through an agency. (This includes not only advertising material, but stationery, printed matter, delivery wagons, signs, buildings and policies relating to courtesy and promptness, all of which help form the reputation of the company.)
- Carry on the preparation of advertising, study of media, study of markets, and application of advertising to such markets in conjunction with the program of sales effort.
- Make up and distribute the advertising budget and exercise constant control over the expenditures of the department.
- Maintain the necessary contacts with other departments and particularly with the managing executives.
- Maintain proper contact with the advertising agencies, interpreting to them the problems and policies of the company, and passing upon their work in the company's behalf.
- Keep abreast of developments in paper, printing, engraving and other processes of duplication.
- Interpret the business as a whole to its clientele and to the industry it represents.
- Plan ways and means of keeping the institution in right relationship to its civic responsibilities and opportunities.
- Train assistants.
- Maintain contact with the publishers of such magazines or newspapers as the firm may be using.
- Maintain files of all advertisements and printed matter in a form suitable for reference.
- Direct the preparation of such literature as is created in the advertising department.
- Check results constantly, and in the light of the lessons thus learned, reshape the work of the department.
- Keep financial and statistical records relating to advertising.
- Attend conferences with president, sales manager, and other officials, taking part in the discussions.
- Direct research into conditions of trade and community development likely to affect judgment in formulating plans.
- Supervise public relations and interpret the ideals, policies, and important developments within the organization to the public.
- Inform the Sales organization in the field as to the company's advertising policy and plans.
- Equip the Sales organization in the field with the necessary visuali-

zation of current and contemplated campaigns for presentation to the trade.

INDUSTRIAL TRAFFIC MANAGER

Objectives

- Choose the kind of transportation to be purchased in a given case, whether it be rail, steamship, truck, express or any other way of shipping.
- Choose the most favorable route.
- Determine to what extent less-than-carload shipments may be consolidated into carload lots for redistribution.*
- Establish warehouses to serve as distribution reservoirs.
- Select sites for plant and warehouses.
- Comply with the regulations of the carriers relating to the marking of containers so as to avoid assessments of penalty charges for non-compliance with the carriers' regulations.
- Take advantage of import and export rates and use ports having the lowest freight rates to and from that point.
- Determine whether the proper classification is being secured for the goods of the firm and be able to describe what is to be shipped in terms used in this classification.
- Study and keep close watch of transportation legislation and rulings.
- Apply properly, storage and demurrage rules affecting collection of moneys in connection therewith.
- Secure terminal and yard service, both industrial and railroad.
- Take advantage of diversion, reconsignment, and in-transit privileges.
- Check freight bills.
- Handle claims for loss, damage or overcharge.
- Study the effect of traffic rates upon the competitive situation.
- Install freight tariff file and keep it up-to-date and in good working order.
- Determine whether the rates applying to commodities shipped to or by the firm are just and equitable as compared with rates on other commodities, and compared with the rates on the same commodities from other locations to various destinations.*
- Advise purchasing agent as to the rates from all possible sources of supply for raw materials.
- Issue bills of lading.
- Handle export shipments.
- Secure consular papers and ocean insurance.
- Apply properly the 43 rules of the Consolidated Freight Classification.
- Present definite proposals with substantiating evidence, when preparing rate proposals, classification petitions and other propositions of this nature.
- Classify the Traffic Department, embodying the Shipping Department and possibly the Receiving Department, so that the routine services and the constructive services will properly function.

- Maintain an adequate library of traffic and railroad publications.
- Hold conferences of the various traffic subordinates in order to take advantage of any constructive ideas which might be offered and apply them to the best advantage of the firm.
- Win and retain the good will of the firm's customers by attending to their traffic needs, more particularly expediting shipments, advising proper freight rates, etc.
- Keep in contact with the carriers' representatives at all times by attending conferences or meetings of reputable industrial organizations, such as the National Industrial League, Shippers' Advisory Board, and Traffic or Transportation.
- Make Pullman reservations and purchase of steamship or railroad tickets for employees traveling on company's business.

ADVANTAGES OF JOB SPECIFICATIONS IN INDUSTRY

From the foregoing illustrations it appears that the following definition is appropriate:

"A job specification is a series of statements which define the essential things that should be accomplished in performing proficiently the duties of a given assignment."

Considerable experience with job specifications written in the form illustrated in the foregoing pages shows that they are of the following uses in industry:

From management standpoint.—Job Specifications:

Give better understanding of type of employee required for each job.
Form a basis for interview and examination of prospective employees.
Furnish information for placement of those who may have certain physical handicaps.

Form a basis for the design of Application and of Progress records.

Form the basis of a training schedule for every employee.

Form the basis of tests to determine if applicant is eligible for appointment or an employee is fitted for promotion to a higher job.

Give detail information as to scope and limitations of every job.

From employee's standpoint.—Job Specifications:

Make available clear descriptions of the features and requirements of all jobs, thus giving an opportunity to select and qualify for one of which the applicant or employee would otherwise have no knowledge.

Furnish a program of progressive steps and thus promote incentives to advance.

Give suggestions as to how to improve himself in order to do his particular job better and train for advanced work.

Promote good will because of the clear understanding which the employee gets regarding his work and opportunities.

From standpoint of outside agencies, Job Specifications, when generally adopted by industry,

Define the requirements of the industrial field in such manner as to enable educational institutions to train prospective employees more suitably for their vocations; thus benefiting both worker and industry.

Enable the Government in times of emergencies more intelligently to classify the mobilized forces; thus facilitating the process of

assigning individuals to posts more suitable to their peculiar abilities.

Establish a means of determining the levels of ability required for each grade of employment throughout each industry.

Form a basis for establishing common terminology for similar occupations in different industries as far as practicable.

ADVANTAGES OF JOB SPECIFICATIONS TO EDUCATION

Direct uses of job specifications to specialized training in industry have been mentioned in the preceding sections. It was there shown how the objectives of the job define goals for the worker to achieve, and how a pyramid outlines a progressive growth in skill and mastery over jobs of increasing difficulty and responsibility. The content of the pyramid also guides the company in organization of supplementary materials of instruction, in development of tests of all sorts, and in determining relative proficiency and standards of achievement.

Clearly job specifications have the same direct application to trade instruction in schools. In this case, if intensive work is to be given, it is necessary to analyse each of the objectives of the job into simpler elements or jobs which can be conveniently handled in a school program. For example, the job specification for a tire repair man reads: Repair injuries to automobile tires. Classification of all forms of tire injuries and analysis of their cures shows that the following 28 simple operations include all elements of skill which an expert tire repair man must have. These also define the materials of instruction for the course.

- | | |
|--------------------------------------|--|
| 1. Vulcanize small hole. | 17. Retread, using kettle. |
| 2. Vulcanize cut or blowout. | 18. Retread, dry cure method. |
| 3. Splice inner tube. | 19. Cure sectional repair. |
| 4. Apply valve pad. | 20. Cure inside repair. |
| 5. Replace valve stem. | 21. Preserve tread pattern. |
| 6. Repair tread cut. | 22. Tread cut (Sylvartown cable cord tire repair). |
| 7. Repair mud boil. | 23. Replace cord section. |
| 8. Repair scraped sidewall. | 24. Make sectional repair. |
| 9. Repair rim cut. | 25. Apply cord patch. |
| 10. Repair fabric break. | 26. Make sectional repair, cord truck tire. |
| 11. Repair half section. | 27. Make sectional repair, clincher type. |
| 12. Repair full section. | 28. Make sectional repair, rope tires. |
| 13. Repair top section, fabric. | |
| 14. Repair inside sectional, fabric. | |
| 15. Repair inside and outside. | |
| 16. Retread a tire, fabric and cord. | |

This process of analysing job specifications into simpler elements is called "job analysis." Specifications may be analysed in many different ways, not only for purposes of instruction, but also for determining relative proficiency, lines of promotion, classification systems or terminology. Much of the success of training depends on how well the job analysis is done.

The effectiveness of technical training can be much increased and at the same time other liberal educational values secured by carrying the job analysis one step further. While many of the operations in skilled work require thought and judgment, high skill depends also on fine coordination of nerve and muscle to the point where certain motions or actions become automatic. Such automatisms are established by drill. Therefore it reduces training time if the desired automatisms are separated from those exercises that require thought, and properly designed drills are given to develop them.

In like manner technical training may have a powerful influence in making men more honest, more accurate, more dependable, and more industrious. It may also foster the development of habits of critical thinking, of weighing evidence, of discerning controlling elements in situations, of evaluating relationships, and of deducing consequences. The manner in which the work is done has, in addition, important results in determining student attitudes toward school and even toward life itself. When the work is well done, these desirable habits and attitudes evolve spontaneously in most people. It helps the instructor to achieve the desired result if the habits and attitudes that may be fostered by a particular job are listed separately in a third column of the job analysis. No attention is paid to this list when all goes well. But when the individual fails to develop the desired attitudes, or when bad habits appear, special individual treatment is given. This may call for services of a physician or a mental hygienist. Making an instructor pay conscious attention to developing attitudes and habits of his student has proved most useful in many cases.

It was on the basis of a triple job analysis of this sort

that the course of training radio code operators in the army was developed and the time of training reduced about half. The following sample from that analysis indicates how it is made:

RADIO OPERATOR

Objectives

Transmit and receive in International code 15 code groups of five letters each per minute, for three minutes, transcribing received signals with pen or pencil in printed characters with a maximum of six erroneous letters.

Set up and make the necessary connection with the operation of ordinary types of radio sets.

Make necessary adjustments for the proper tuning and operation of radio sets.

Test for serviceability and care for storage batteries used with radio sets.

JOB ANALYSIS

<i>Automatism</i>	<i>Content</i>	<i>Habits and Attitudes</i>
Letter	Primary batteries	Analyse situations
Receive code	Series and parallel connections	Evaluate elements
Send code, etc.	Storage batteries	Diagnose difficulties
	Resistance	Weigh evidence
	Magnets	Discern relationships
	Wave meter	Plan action
	Transmitting set	Act honestly
	Receiver	Work accurately
	Lettering	Cooperate
	Receiving	Deal squarely, etc.
	Transcribing, etc.	

This triple job analysis may be applied with benefit to almost any type of occupation or social activity. A good exercise for those who wish to try it out in the social science field is to make such a triple analysis of the items in the following job specification:

AMERICAN CITIZEN

Objectives

Form a more perfect union.

Establish justice.

Insure domestic tranquillity.

Provide for the common defense.

Promote the general welfare.

Secure the blessing of liberty to himself and his posterity.

What are the automatisms, the techniques, the habits and the attitudes characteristic of people who succeed in establishing justice? What are essential conditions of domestic tranquillity? What do people do to insure its maintenance? What is the general welfare? How do people act to promote it?

The foregoing methods of analysing job specifications apply mainly to specialized training devised to produce skilled workers in specialized fields. For purposes of general education, such as should be given at least through the first six grades, a different treatment is necessary. When a wide range of specifications for a great variety of occupations are studied, it is found that certain expressions occur with relative frequency. Examples of such expressions are: File documents, classify, make reports, arrange, interpret sketches, read meters, prescribe first aid, balance accounts, keep records, abstract reports, make out checks, traffic regulations, fire prevention, operate furnace, etc. Such skills are needed in many occupations. They are "Common" elements of the world's work with which everyone should be at home.

Skills of this sort are not acquired adequately by mere drill in the mechanics of the operation. For example, if one is to do a good job at filing documents, or classifying, or abstracting reports, he must analyse, discern relative importance, detect relationships, weigh evidence, and draw consistent conclusions. Training in these habits may be given in many of the present courses in schools. It is such material as this that a job analysis of job specifications yields as an aid to general education. Analyses of this sort are in progress.

In addition to these direct applications to school practice, job specifications are most useful in vocational guidance. When well written they give a clear and vivid description of each type of work. A person's instinctive reaction to this kind of a picture is an indication of his interest. Most employment, especially in higher professional work, is done on the basis of informal verbal job specifications. Accurate printed statements are even more effective.

The art of interpreting job specifications for purposes of

education is far less well developed than is the art of writing them. This is perfectly natural. With the help of suitable directions,¹ any normal person can write a good specification for his own job. But interpretation requires insight and balanced judgment. Character, vision, creative imagination are the ultimate aims of education. These do not appear in job specifications and must not be sacrificed to the practical and more elemental need for learning to earn a living.

Educators very properly have their attention focused on the ultimate aims of education. They have little opportunity to know intimately either the practical requirements of the world's work or the impractical bungling of young graduates in their first efforts to earn their salt. Business men appreciate the high aims of education but must master the material difficulties of existence lest we all starve. They cannot pay one dollar for sixty-cent achievement and live. Hence, misunderstandings arise, and taxpayers demand that schools deliver goods that are clearly worth the price.

Job specifications establish mutually intelligible communication between industrialists and school men. They open the way for complete removal of all misunderstandings. But their chief significance does not lie in this alone. Their fundamental importance comes from the fact that they lead first to understandings and then to actions that are educationally sound. Schools are finding that well written job specifications help them substitute real achievement for academic credit. Industries are finding that they help them develop men while making profits. Practical methods of consciously developing character while learning to do real jobs are evolving through their intelligent use.

Job specifications that yield the information schools need to build better citizens are now available. By making wise interpretations, education can increase its power to release and develop human talent. And as the quality of the school work improves, the controversy over costs recedes and ultimately vanishes.

¹ The Council has published such a pamphlet and will be glad to send it on request. NATIONAL INSTITUTE OF EDUCATION

